

CHAPTER 8

COMPUTER GENERATION

Overview

Introduction Breakthroughs are being made in the graphic arts world through the use of computers. New wave imagery is replacing tired cliches. This innovative art world captivates our imagination with fantastic images that look surrealistic. Computer imagery or enhancement is rapidly becoming the norm in Navy graphics shops and presentations departments.

Objectives The material in this chapter enables you to do the following:

- Identify software and assign and protect classified data contained on disks.
- Identify computer viruses.
- Differentiate between common software features, options, and commands.
- Evaluate the differences between directories and subdirectories.
- Identify the steps needed to convert conventionally conceived images to digital imagery.
- Create, modify, save, and retrieve tags in desktop publishing software.
- Create, modify, save, and retrieve frames.
- Create, modify, save, and retrieve style sheets.
- Modify text attributes.
- Create, modify, save, and retrieve web pages.

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Overview, Continued

Acronyms

The following table contains a list of acronyms that you must know to understand the material in this chapter.

Acronym	Meaning
ASCII	American Standard Code for Information Interchange
Bit	Binary Digit
CPU	Central Processing Unit
CRT	Cathode-Ray Tube
CYMK	Cyan, Yellow, Magenta, and Black
DPI	Dots Per Inch
DTP	Desktop Publishing
E-mail	Electronic Mail
EMR	Electro-Magnetic Radiation
EPS or EPSF	Encapsulated Postscript Format
FAQ	Frequently Asked Questions
GB	Gigabyte
GIF	Graphic Images Format
GUI	Graphical User Interface
HTML	Hypertext Mark-up Language
http	Hypertext Transfer Protocol
JPEG or JPG	Joint Photographic Experts Group
KB	Kilobyte
LPI	Lines Per Inch

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Overview, Continued

Acronyms (Continued)

Acronym	Meaning
PC	Personal Computer
PDF	Portable Document File
RAM	Random Access Memory
RGB	Red, Green, Blue
RIFF	Raster Image File Format
RIP	Raster Image Processor
ROM	Read-Only Memory
SYSOP	System Operator
SVGA	Super Video Graphics Array
TIFF	Tag Image File Format
TSR	Terminate-and-Stay Residents
VGA	Video Graphics Array
WYSIWYG	What You See Is What You Get
WWW	World Wide Web

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Overview, Continued

In this chapter

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Software

Introduction

Computers can do nothing without a set of instructions the system operator inputs to the central processing unit. These instructions allow the computer to perform many functions including sorting, saving, and processing information with remarkable speed. Review *Illustrator Draftsman (DM)* Volume 1, chapter 3, or read NEETS Module 22, *Introduction to Digital Computers*, before studying this chapter to familiarize yourself with computer hardware systems.

Software

Software is the set of instructions, program parameters, or data. Hard drives and floppy disks are hardware; the data on the disk is software. The two categories of software are operating system software and applications software.

Operating systems software

Operating systems software manages the operation of the entire computer system. Its primary job is managing the system and system resources such as the disks, the printers, and the modems. Operating system software links computer hardware to applications software. Operating systems software exists primarily in read-only memory (ROM).

Installing operating systems software

Install operating system software onto the system hard disk drive before attempting to load applications programs. Follow the manufacturer's owner/user manual. The owner/user manual will tell you setup commands that lead you through the installation process from the display screen. The display screen prompts you to enter the appropriate keystrokes or mouse movements to place the software into the hard drive. Once you have operating system software installed, put the original distribution disks or CD ROM disks in a safe place. You may need the original operating system software distribution disks later.

Applications software

Applications or user software are program disks that help you accomplish specific tasks. Distribution disks for applications software require information about the microcomputer configuration or what devices make up the computer system. Applications software is created using WORM (Write Once/Read Many) technology and stores in ROM. This allows you to use the program without altering the original program's instructions.

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Software, Continued

Installing applications software

Before installing applications software, make sure the operating system software is properly installed. Applications software won't install if there are problems with the operating system. Refer to the manufacturer's owner/user manual before installation to determine if the memory requirements of the program exceeds your hard drive capacity. Once you install applications software, put the original distribution disks in a safe place.

Using software wisely

To use software wisely, familiarize yourself with the capabilities and limitations of each software program and consciously develop good, systematic approaches in your work habits. The following list contains several smart work habits to develop that help you avoid common problems.

- Define document parameters before entering images or text. Defining document parameters allows applications software to paginate the document. Pagination includes setting the margins, page numbering, and selecting text attributes before entering the data into the document. Pagination saves the extra effort required to rearrange pages later. Once set, the computer memory retains the format settings and applies it to each page of the document without further prompting.
 - If the software allows, display reveal codes (codes indicating selected functions) on the screen as you work by selecting this option from VIEW. This process allows you to see any coding errors made during the creation of the document. Not every software program displays reveal codes.
 - Eliminate unused codes. If you are able to display reveal codes on the screen, remove erroneous or unused codes. Maintain only required coding in documents to make it easier to edit or modify text later. Unused or incorrect coding in documents affects the amount of control you have over the finished product.
 - Do not use the SPACE bar to position text. Set tabs to indent text into documents. This procedure allows you to maintain control of the text if you must modify it later.
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Software, Continued

Using software wisely (Continued)

- Break the habit of hitting the ENTER or RETURN key to move the cursor to the left margin before completing a line of text. Using this key unnecessarily enters a hard return into the coding of the document. As you enter text, the cursor automatically returns to the left margin when the line of text fills. This feature, called *word wrap*, enters a soft return vice a hard return into the document.
- Hit the SAVE option periodically. Although most computers have a timed back-up feature, this is a crash-protection feature only that saves data if you turn off the machine or close the document before saving it properly. Make it a habit to save data whenever you must look away from the document to answer the phone, hold a conversation, or look up reference material. Habitually saving material, in addition to the timed backup feature, lessens data loss should unforeseen circumstances cause the computer to crash, freeze, or lock up.
- Use working copy disks. Using working copy disks saves memory space, and facilitates safeguarding and protection of classified or sensitive material. If the computer develops a virus or loses data during power fluctuations, the damages would be recoverable.
- Make back-up disks. At the end of the work day and even if you save data on the hard drive, make a back-up disk. This disk may save you hours of work if your hard drive crashes and you must swap out hard drives.
- Label disks. Label disks when created with the correct security marking and file names. This prevents inadvertently using disks that have data already stored, mixing classification levels, or misplacing data by mixing unlabeled used disks with unused disks.
- Select file names that can be identified by another SYSOP. Refer to the *Department of the Navy, Standard Subject Identification Codes* in SECNAVINST 5210.11 for the five sections and 13 major subject groups used in Navy graphics shops. Select file names that identify or easily cross reference to information on the disk.

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Software, Continued

Using software wisely (Continued)

In sea-going environments, secure computer hardware to desks or tabletops to prevent damage from heavy rolls and pitching during high sea states.' Excessive movement of CPUs may cause Video Graphics Array (VGA) cards and SVGA (Super Video Graphics Array) cards to loosen causing the color balance of monitors to shift or blink erratically. A drop from a height of approximately 3 feet (desk height) may cause substantial and irreparable damage to hardware.

Keep liquids and foodstuffs away from computer equipment. Place drinks and food below the keyboard or on another surface to prevent accidental spills and debris from ruining equipment.

Software or disk security

Often the data on disks is classified or sensitive to national security. Graphics and text created electronically and stored on disks require protection. The procedures for protecting and marking disks, disks drives, and work stations differ slightly from the procedures for marking graphics, photographs, and documents. Security procedures for electronic data are found in the *Department of the Navy, Automated Data Processing Security Manual*, OPNAVINST 5239.1.

Security

The three levels of data processed electronically are Level I, Level II, and Level III. If your command processes Level I and/or Level II data, it must provide a specific degree of protection. The following table defines the 3 levels of data:

Level	Meaning
Level I	Classified; Confidential, Secret, and Top Secret
Level II	Unclassified; requires special protection, such as For Official Use Only and data covered by the Privacy Act of 1974
Level III	Unclassified

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Software, Continued

Level I

Level I data (classified) handling requirements and procedures are similar to those for handling hard copy classified material. You are responsible for safeguarding this information at all times. Within Level I, the four modes of secure electronic processing of classified data are *system high*, *dedicated*, *multilevel*, and *controlled* mode. The following table specifically defines the four security modes:

Mode	Definition
System high	All computers on the network and connected peripherals protect data according to the requirements for the highest classification category and type of material contained in the system. System high requires a security clearance but not necessarily a need-to-know for all material in the system.
Dedicated	Specific users or a group of users with a security clearance and a need-to-know for the processing of a particular type of classified material exclusively use and control all of the computers and peripherals on a system.
Multilevel	Various types and categories of classified material stored and processed concurrently in a computer system that permits selective access to material by uncleared users and users with differing security clearances and need-to-know. This is a function of the operating system and associated system software.
Controlled	A computer system in which at least some users with access to the system have neither a security clearance nor a need-to-know for all classified material in the system.

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Software, Continued

Level II	Level II data is unclassified data that requires special protection. To assure protection for processing Level II data, the Navy established the limited automated information system access security mode. A system or network operating in the limited access security mode restricts the access to data only to individuals who by their job function have a need to access the information.
Level III	Level III does not require the safeguards of Level I or Level II data. It does however, require proper handling to make sure that data is not lost or destroyed.
Electronic media security	<p>Computer systems and their associated peripherals require control and safeguarding at all times. This protection includes the disks, diskettes, disk drives, monitors, printer ribbons, and generated hard copies. In general, the two types of electronic media are <i>working copy media</i> and <i>finished media</i>.</p> <p>WORKING COPY MEDIA: Working copy media is temporary information. It stays within the confines and control of your activity. After creating a working copy, retain it for 180 days before destruction. Examples of working copy media are information used and updated at frequent intervals.</p> <p>FINISHED MEDIA: Finished media is permanent information. It can be released to other commands and activities. Finished media contains information that does not change or is pertinent for more than 180 days.</p>
Security controls	Date and mark classified electronic media when you create it. Assign disks classified Secret or Top Secret a sequential identification number to make tracking them easier. Control electronic media in the same manner prescribed for classified material. Protect electronic media according to the highest classification ever recorded on the disk. For media classified Top Secret or Secret, maintain a master list including the overall security classification and the identification number permanently assigned to the disk.

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Software, Continued

Disk security markings

To avoid confusion, set aside groups of disks for recording classified data at each security level. Mark each disk or diskette with stick-on labels identifying the overall security classification and permanently assigned identification numbers. When you declassify and degauss disks, remove all external labels indicating the classification unless you immediately use the disks to store information of the same classification level.

Figure 8-1 shows how the different levels of classification should be clearly marked on the exterior labels of disks.

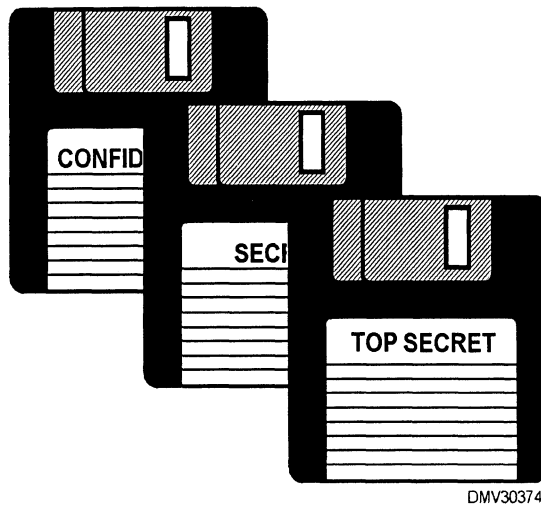


Figure 8-1.—Classification markings clearly marked on disk labels.

Media disposition

Magnetic media, such as disks, eventually wear out or become damaged. If disks contain classified material, degauss or erase them before destruction. Handle and dispose of printer ribbons and carbon papers used to print/transfer classified information according to the highest classification level of the data printed by that ribbon or carbon. Follow the requirements and instructions outlined in the *Department of the Navy, Information and Personnel Security Program Regulation*, OPNAVINST 5510.1.

Viruses

Introduction

Just as humans are infected by ingested viral agents, so, too, are computers vulnerable to suspect data entered into the CPU. Suspect data is referred to as viruses. Left untreated, viruses seek and destroy data and may cause eventual collapse of the infected computer system.

Viruses

Viruses are data parasites written and released into programs with the intention of creating mahem. These parasites seek data stored in hardware and software (hosts) to infect or destroy. Some viruses infect every file, others infect only applications software, data files, or operating system software. Viruses duplicate and reproduce themselves into legitimate files and may spread rapidly or sit in the system for months before attacking. Viruses may activate when you initially start or boot up the computer or immediately upon entering the system.

Virus transmission

Copying or erasing infected floppy disks, downloading data from infected computer bulletin boards, or accessing programs or networks via modems are all ways of acquiring viruses.

Virus identification

Sudden and unexplained pictures or messages appearing on the monitor screen or the disappearance of programs and data may indicate the presence of viruses. Investigate any unusual behavior in computer performance. New viruses appear regularly and may take any shape or form.

Virus elimination

Antivirus programs are software programs designed to detect and eliminate viruses. Some antivirus programs require activation each time you want the program to seek and destroy viruses. Other antivirus programs, called “terminate-and-stay resident (TSR)” programs, remain in ROM automatically activating each time you boot up or insert disks into the computer. Installing TSRs into the hard drive of the computer may interfere with software programs already in memory. If this happens, removing the antivirus program should return the software to normal.

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Viruses, Continued

Virus protection

To prevent or reduce exposure to computer viruses, take the following precautions:

- Use only commercially available disks.
- Avoid exchanging disks with another SYSOP.
- Limit the number of computers your computer contacts (via modem or floppy disk exchange).
- Back up your disks regularly as you work to minimize the amount of data lost should you contract a virus.
- Write-protect disks whenever possible. The write-protect feature locks up disks preventing inadvertent changes by virus infection.
- Use antivirus programs regularly and when borrowing disks from other computer users.
- Scan the hard drive weekly and create infection-free back-up disks.

Is it important to guard against viruses, to find and destroy viruses, and to disinfect any disk that may be infected also. Simple precautions minimize virus infections. Viruses are easier to prevent than to isolate and treat.

As good as antivirus programs are, they require updating to stay abreast of new viruses. The fear of virus infections should not cripple your interaction with computers and software so long as you invest in good antivirus software and use precautions.

Common Software Features

Introduction

The variety of software programs used by the Department of Defense and the U. S. Navy make it impractical to discuss each program and undesirable to select only one program for inclusion in this chapter. There are, however, several features and options common to a majority of software programs. There is no attempt to identify individual programs in this section. Your software may or may not have any of these features.

Cursors and pointers

Cursors and pointers indicate a current position on the screen. Common cursors are blinking horizontal or vertical bars and are usually moved by the keyboard or mouse. Pointers are usually associated with the mouse and appear as arrowheads, trailing arrowheads, crosshairs, hourglasses, I-beams, prohibiting circles, hands, and sometimes bars and cross hairs with directional arrows.

Figure 8-2 shows a variety of common cursors and pointers.



Figure 8-2.—Common cursors and pointers.

BLINKING BAR: A blinking, heavy-weighted bar usually precedes text. Its place is to the left of the next character. A mouse (rapid action input device) pointer may also appear on the screen, but as a non-blinking I-beam. The I-beam moves as the mouse moves. The blinking bar moves by operating the keyboard, curser control keys, or by repositioning the bar with the mouse and clicking to anchor it in place.

ARROWHEADS and TRAILING ARROWHEADS: Arrowheads appear when you use a mouse to move around the screen in graphics software programs. The tip of the arrowhead must touch the section or item you intend to alter. If the image of the arrowhead tail lingers, it is said to be trailing.

CROSSHAIRS: Crosshairs representing the curser or pointer appear when using the draw feature of graphics programs or desktop publishing programs. Crosshairs allow more precise positioning by focusing on a picture element (pixel).

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Common Software Features, Continued

Cursors and pointers (Continued)

HOURGLASSES: The appearance of an hourglass on the monitor screen indicates that the computer is accessing memory or a function. While the hourglass is displayed, the keyboard or mouse is inoperable. Hourglasses with an arrow indicate the computer is working, but you are free to access another function. The hourglass or hourglass with arrow disappears when the computer completes the requested activity.

DIRECTIONAL ARROWS on bars or cross hairs: Directional arrows attached to bars or cross hairs indicate that the cursor may shift selected items or lines in the direction of the arrows to another position in documents. Directional arrows also allow you to resize information windows.

PROHIBITING CIRCLES: Circles crossed diagonally by a line that may or may not have an additional icon let you know that the application or function you request is prohibited.

HANDS: Hands or question marks indicate that clicking in a particular space, phrase, or image accesses the HELP feature of the software program. On the Internet or web pages, these helpers indicate internal and external links to web sites.

Icons

Icons are small graphic images representing functions or applications of software. Icons eliminate memorizing multiple keystrokes by replacing the keystrokes with pictures. Icons speed up selection and execution of options. The ability of software to use graphics to make software more user friendly is part of the software graphical user interface (GUI).

Screen displays

Screen displays are the entire monitor face capable of showing information. Some screens show only a portion of text requiring the viewer to scroll. Screens that show a portion of the whole image are difficult to work with and make it hard to develop a feel for page aesthetics. Monitors having more pixels and larger working monitors may allow you to see exactly how pages will appear when printed. Monitor resolution is adjustable. On-screen information appears and disappears through what are called windows.

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Common Software Features, Continued

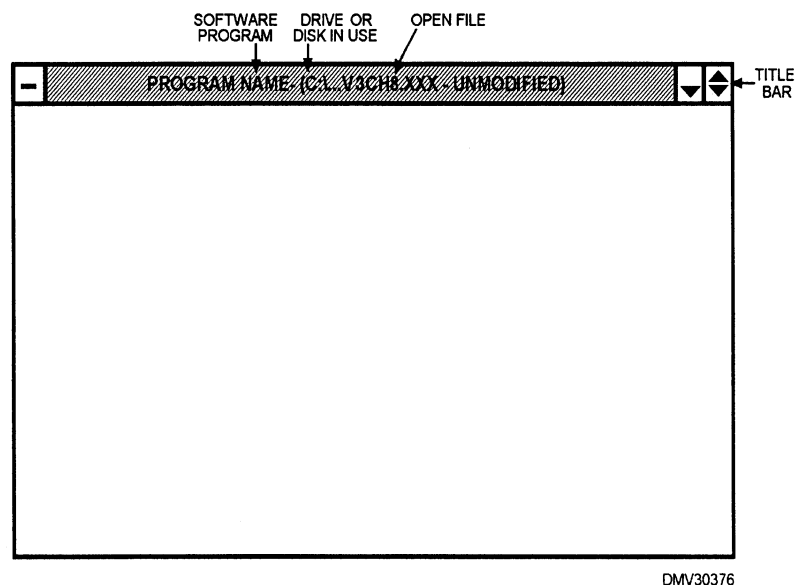
Windows

Windows are enclosed areas on the screen and are called application windows. Within the application window, other open windows display the file that is currently open, the features available to change the file, the software tools to change the file, and the file itself. Clicking into features and options opens windows that contain all the information required to access software applications. Multiple windows can appear side-by-side, made smaller or larger, or be temporarily placed elsewhere on the screen until required.

Program and file name

A window called a *title bar*, usually located across the top of the screen, displays the name of the software program and the particular file currently open. Preceding the file name is a designator indicating which drive or disk the file is on.

Figure 8-3 shows a program and file name (volume 3, chapter 8) in the hard drive (C:) in a window at the top of a screen.



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Figure 8-3.—The onscreen title bar.

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Common Software Features, Continued

Minimize and maximize

Minimizing windows reduces the image to a preset smaller size. Maximizing windows fills the screen monitor with the document image and may make menus and toolbars disappear altogether.

Figure 8-4 shows the position of the minimize and maximize features.

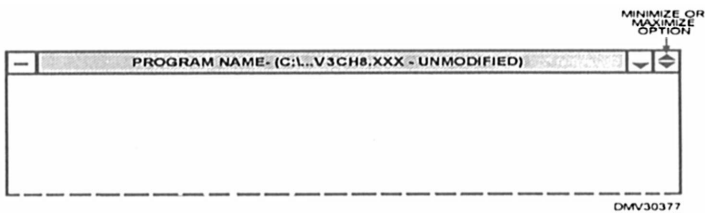


Figure 8-4.—Locating the minimize/maximize options on a windows 3.X program.

Close or exit

To close or exit a program, click the mouse on the minus (-) or (x) symbol in the window displaying the software and file name. This feature closes the program quickly.

Menus

Menus are lists of features that appear at the top or the side of the monitor screen. These features control document parameters. Common features are FILE, EDIT, VIEW, INSERT, FORMAT, TABLE, GRAPHICS, TOOLS, WINDOW, and HELP.

Figure 8-5 shows how menus may appear in the window across the top of monitor screens.

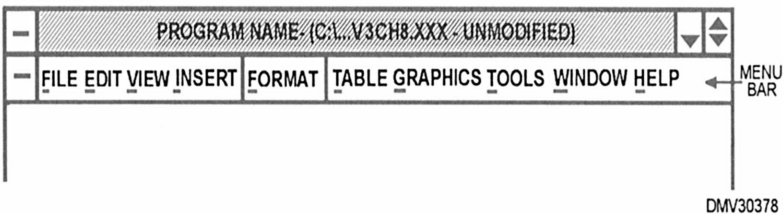


Figure 8-5.—Menus.

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Common Software Features, Continued

Menus (Continued)

Clicking the mouse on menu features reveal document parameter options available to you. This list of options is called a *pull-down menu*. The options in this feature appear as lists. Clicking the mouse on an option in a list changes the document. To return to the document, click the main menu item.

Figure 8-6 shows a pull-down menu for the FORMAT feature.

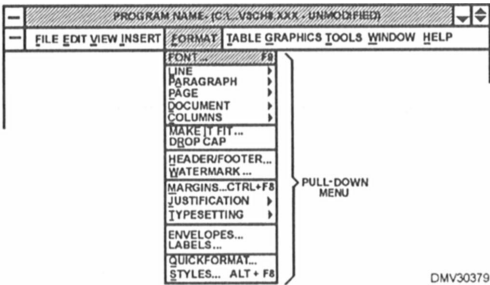


Figure 8-6.—Format feature pull-down menu.

There are additional pull-down menus to further define document parameters you want to change.

Figure 8-7 shows the menu feature FORMAT, the first pull-down menu, and the second pull-down menu.

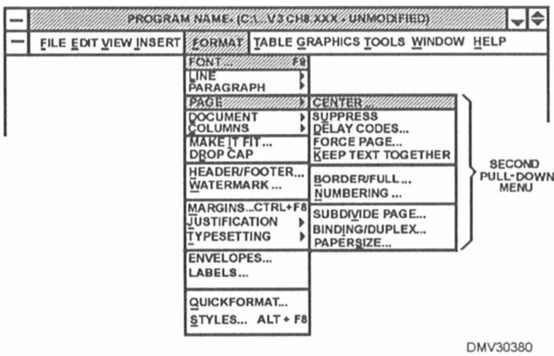


Figure 8-7.—A second pull-down menu.

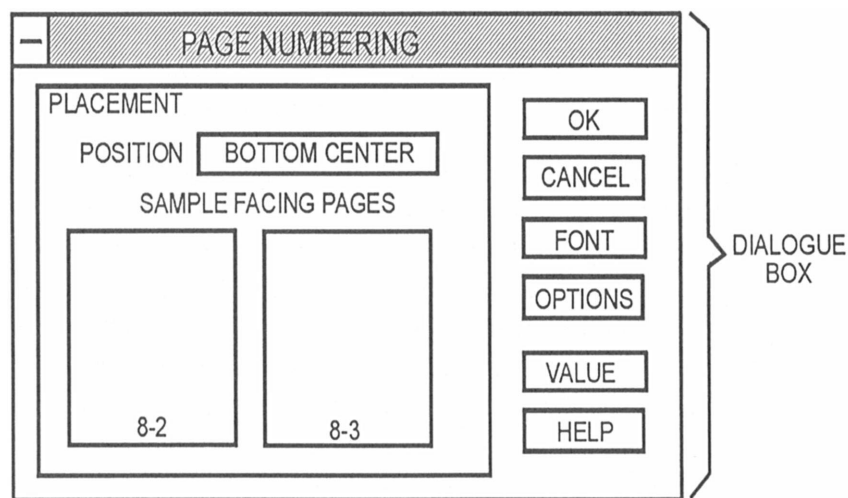
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Common Software Features, Continued

Menus (Continued)

Further defining document changes leads you to a prompt that specifically addresses those changes you want to make. The window that prompts you to enter changes is called a *dialogue box*. Some dialogue boxes offer an options list that appears similar to pull-down menus. This options list inside the dialogue box is called a *drop-down list*. The dialogue box accepts the changes you select after clicking OK. If you accept the changes, the document immediately reformats reflecting the changes.

Figure 8-8 shows the dialogue box to change page numbers both in number 'structure and page position.



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Figure 8-8.—A dialogue box for page numbering.

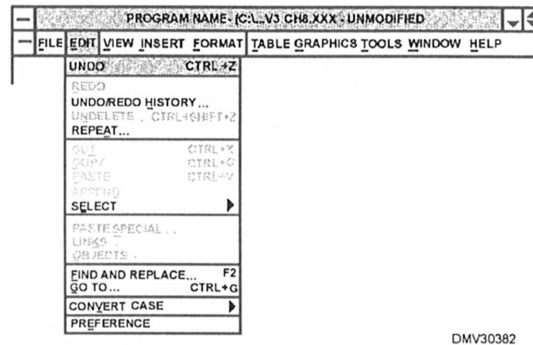
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Common Software Features, Continued

Menus (Continued)

You may click into menu features and find that some options on the list in the pull-down menu are dark and some are greyed out. Those features that appear 'dark' are currently available to you for use. Greyed out features are not available or are inactive options you cannot access.

Figure 8-9 shows the EDIT feature with greyed out and dark options.

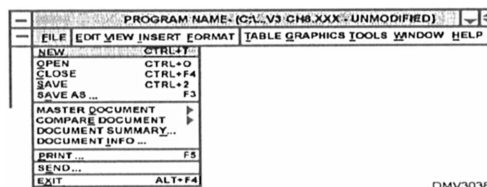


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Figure 8-9.—Greyed out and dark options of the EDIT option.

Menu feature options terminating in three dots (. . .) require additional information from you before activating. For example, one option in FILE is SAVE. Clicking the SAVE (notice the absence of dots) option saves data in the hard drive, but clicking SAVE AS . . . requires you to indicate where you want the data to store or to indicate a different file name. If you did not name a document before clicking SAVE, the screen prompt automatically appears as SAVE AS . . . awaiting your input for the file name.

Figure 8-10 illustrates the difference in SAVE and SAVE AS . . . options in the FILE feature.



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Figure 8-10.—The difference between the SAVE and SAVE AS... options.

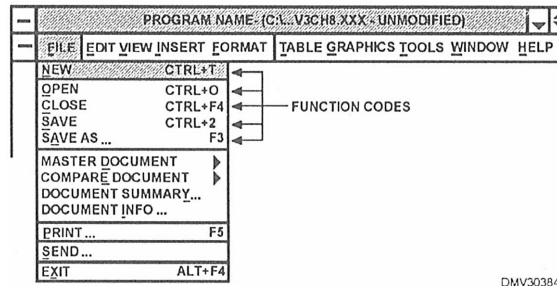
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Common Software Features, Continued

Menus (Continued)

Some pull-down menus also have indicated keystroke sequences on the right side. These are the keystrokes and sequence code to access the function if you use a keyboard instead of a mouse.

Figure 8-11 shows the function codes in the FILE menu to access the function by keystroke.

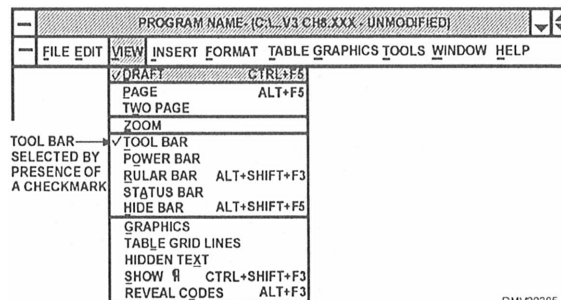


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Figure 8-11.—Listed keystrokes as an option to access function codes.

Other symbols used in feature lists are check marks or bullets. Check marks show which option is selected. For example, look at the VIEW feature. A check mark next to TOOLBAR displays the toolbar on the top or side of the screen image. Clicking again on VIEW activates the option.

Figure 8-12 shows VIEW with the TOOLBAR option selected.



DMV30385

Figure 8-12.—The toolbar selected with the presence of a checkmark.

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Common Software Features, Continued

HELP

HELP is a feature that provides step-by-step instructions in some aspects of the software program installed on the computer. HELP displays appear on the screen and prompt you through selected functions. You may also print the HELP instructions to hard copy printouts. To make HELP displays disappear from the screen, click the CLOSE box. Most software programs have HELP features.

Figure 8-13 illustrates how HELP features lead SYSOPs through unfamiliar procedures.

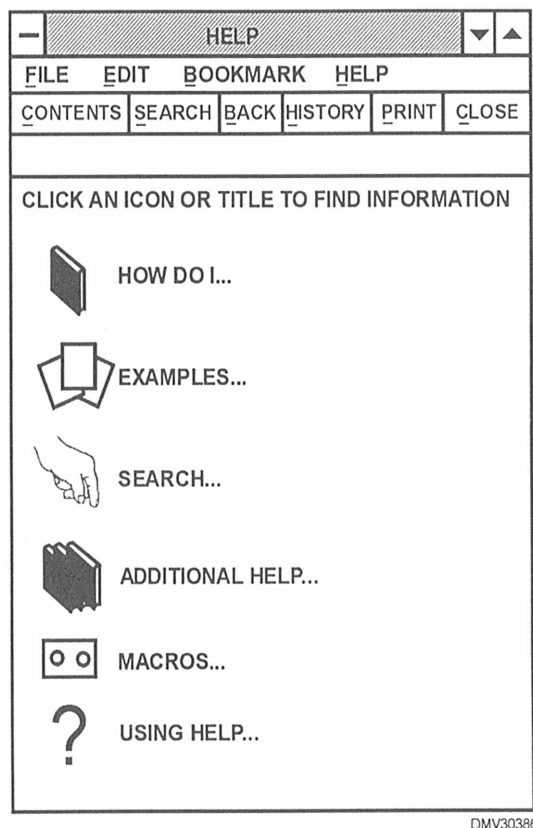


Figure 8-13.—HELP features.

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Common Software Features, Continued

Scroll bars

Scroll bars are areas on the side and bottom of a monitor screen display that allow you to rapidly scroll or run through documents or software options by clicking and holding the mouse on the arrow pointing in the direction you want to travel. Scroll bars appear when there is more information or options than can be visibly displayed on the monitor. Inside the scroll bar is a square or box that indicates approximately where you are in the document.

Figure 8-14 shows a monitor screen with scroll bars at the side and bottom of the display.

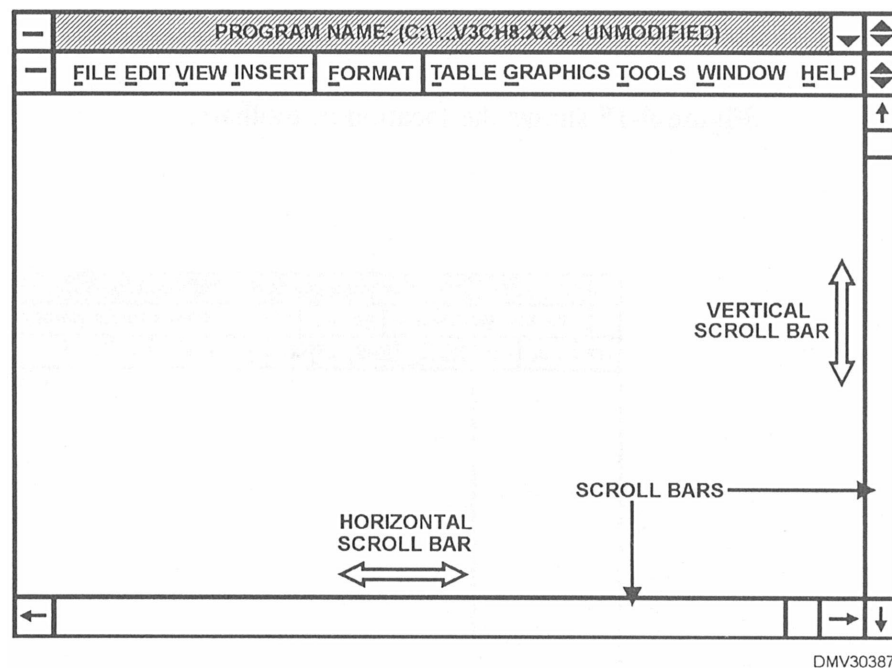


Figure 8-14.—Scroll bars.

Common Software Options

Introduction Just as software programs standardize popular features, so, too, are options becoming standard. Popular options reoccur in many software programs. This segment discusses common software options without reference to individual programs. However, we do refer to some word processing software options in these discussions.

Toolbars Toolbars are a collection of options displayed on the top or sides of monitor screens. The SYSOP may elect to display or not to display toolbars by clicking the pull-down menu under VIEW and placing or removing a check mark to the left of Toolbar. Toolbars consist of common options such as Font Face, Font Size, Justification, Line Spacing, Table Create, Column Define, Zoom, Font Attributes, Bold, Italicize, Underline, and Symbology. Software may also have program specific options on a separate toolbar that enable the SYSOP to maximize using the software.

Figure 8-15 shows the location of toolbars.

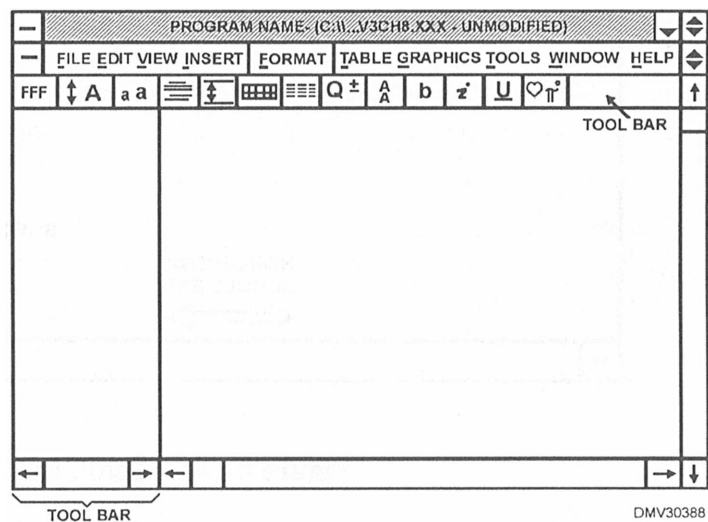


Figure 8-15.—Typical onscreen locations for toolbars.

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Common Software Options, Continued

Font-related options	Font-related options allow SYSOPs to change attributes in any font the software offers. Font attributes include letter style and size. Font Face refers to letter style and Font Size refers to letter size. Select Style accesses preset characteristics that define where the text appears on the page. For instance, using Chapter Heading under the Select Style option produces large, bold text typical of chapter titles.
Justification	Clicking on the button for Justification displays a small pull-down menu offering flush left or right, centered, or full justification. Selecting flush left or right aligns text on the left or right side margin. Centering text centers the line of text between the margins.
Line Spacing	Line spacing controls the amount of space between lines. Similar to typewriters, options include single spacing, 1 ½ spacing, and double spacing.
Tables and columns	Since tables and columns are often embedded in text, toolbar buttons offer the SYSOP a quick and easy method for creating tables and columns.
Zoom	The Zoom option allows you to look at document pages at different percentages of magnification or as a full page. This is helpful when page aesthetics are critical as in Welcome Aboard brochures and Change Of Command booklets or when you must fit a lot of information into a set space.
Bold, italics, and underline	Toolbar buttons marked “B,” “I,” and “U” offer the options of bolding, italicizing, and underlining text. To access these attributes, select the text, move the mouse to the appropriate toolbar button, and click. Deselect text before continuing in the document. If you fail to deselect, the text continues to bold, italicize, or underline.
Symbology	Scientific, mathematic, linguistic, and graphic symbols are available by using the Symbology toolbar button. The Symbol toolbar button prompts you through the sequence of selecting and inserting symbols.

Common Software Commands

Introduction

Software is developing a common language in the form of commands.

Commands

Commands are words recognized by the computer to access functions. Certain common commands appear in most software packages. You may access commands by pulling down the menus of the software features.

FILE feature

The FILE feature offers the commands of NEW, OPEN, CLOSE, SAVE, and PRINT. Clicking on a command either executes the command or offers a dialogue box.

NEW: Enter the NEW command when you start a new file. A dialogue box may appear to ask you to select a format for the new document.

OPEN: Access an existing document by clicking the command OPEN. A dialogue box appears prompting you to select from a file of existing documents. Once you select the document you want to open, click on the file name, and OK or double click the file name to open the file.

CLOSE: To close or exit a file, click CLOSE. A prompt appears that should ask if you want to save the document. Selecting the desired option automatically executes the function and closes the file.

SAVE: To save a file, click SAVE. The computer automatically saves the data to whatever drive you specify, hard drive or floppy disk and prompts you to name the file before saving it. To save data to disks or alternate hard drives in another format or to rename a file, click SAVE AS. . . and enter the letter designator of the disk or alternate drive.

PRINT: To print hard copies of an open document, click PRINT. A dialogue box appears asking if you want the entire document or a portion of the document, and how many copies you require.

Common commands are not the only commands you will see offered the FILE pull-down menu but, other commands may be program specific. Familiarize yourself with the software in your computer.

Continued on next page

Common Software Commands, Continued

EDIT feature The EDIT features offers commands like UNDO, CUT, COPY, and PASTE.

UNDO: The UNDO command deletes the last command given returning the document to its previous configuration.

REDO: REDO replaces data deleted by the UNDO feature or delete command.

CUT: CUT commands isolate a portion in the document and removes it. In effect, it cuts the portion from the text and moves it into the electronic clip board or scrapbook until you recall it later in the document or in another document. You may also delete the information entirely. The clip board empties when you exit the program or cut or copy new text.

COPY: The command COPY copies selected data. The information remains in the original document with a copy of the data placed in the clip board or scrapbook until the SYSOP requires it. Copied data may be repeated later in the same document or moved to another document. Again the clip board empties when you exit the program or cut or copy new text.

PASTE: PASTE is the command given when the SYSOP wants to recall data that has been cut or copied to the clip board in the document or into another document altogether.

Again, these commands are common to a majority of software programs. Your software program will have many other commands available.

Figure 8-16 shows the EDIT feature pull-down menu.

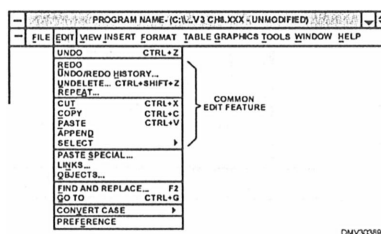


Figure 8-16.—Common EDIT features.

Continued on next page

Common Software Commands, Continued

VIEW feature Two of the most common commands in the VIEW feature are ZOOM and TWO PAGE.

ZOOM: ZOOM is a command that tells the computer to show more or less of the document page. ZOOM commands have preset percentages of magnification ranging from 25% to 200%. Some ZOOM commands allow the SYSOP to select the percentage of document to display. The ability to zoom into or out of a document is helpful when inserting graphics or copyfitting text.

TWO PAGE: In most instances, you will be working on documents in the PAGE mode where only the current page is displayed. The TWO PAGE command reduces the document image allowing two facing pages to appear on the screen simultaneously. This is desirable when you have to create Welcome Aboard or Change of Command brochures and need to view the pages side-by-side. Clicking on PAGE or TWO PAGE immediately executes the command without further prompting.

Figure 8-17 shows the TWO PAGE command for a multiple page document.

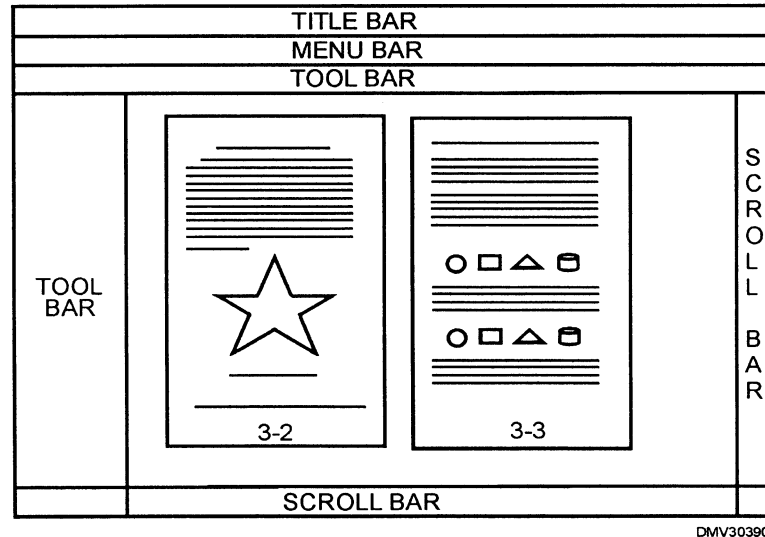


Figure 8-17.—Two pages displayed on screen simultaneously.

Continued on next page

Common Software Commands, Continued

TOOLS feature In the TOOLS feature are vital commands such as SPELL CHECK and THESAURUS.

SPELL CHECK: Clicking the SPELL CHECK command produces a dialogue box asking if the entire document or a portion thereof should run through SPELL CHECK. SPELL CHECK verifies the spelling of each word in the document. If it detects an error, SPELL CHECK offers alternate spellings or words for you to preview. Once you determine the correction, click to replace that word in the text. Run every document through the SPELL CHECK command. SPELL CHECK, however, cannot tell if a word is incorrectly or correctly used. Continue to manually proofread text before declaring a job finished.

Figure 8-18 shows a typical SPELL CHECK dialogue box.

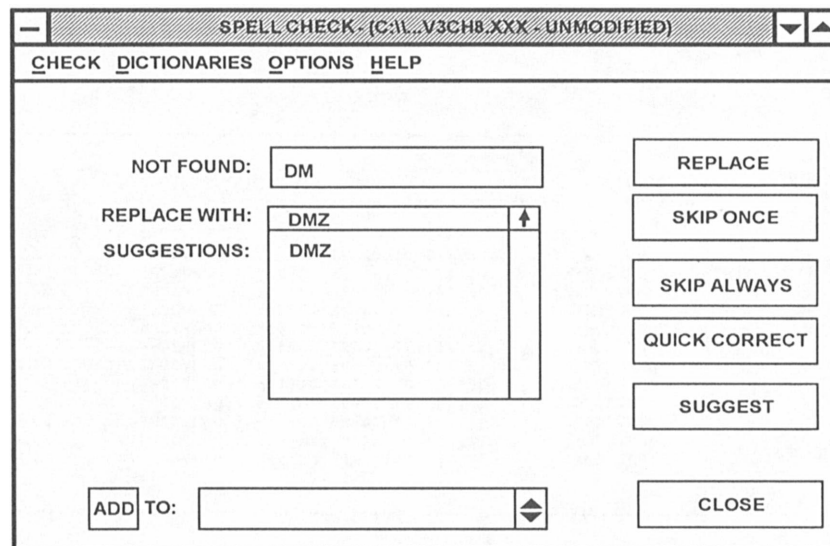


Figure 8-18.—A typical spell check dialogue box.

THESAURUS: The THESAURUS command offers synonyms to reduce repeating the same word or words. For individuals with limited vocabularies that often write text, a thesaurus is invaluable.

Directories and Subdirectories

Introduction Data stored on disks requires a system of retrieval. Computers use hierarchal systems that go from general information in directories to specific information in subdirectories. Carefully plan the organization of information on disks and hard drives.

Directories or files Directory files are groups of files that are extensions of the list file. The main file or directory, called the *root directory or parent directory*, is distinguished by a backslash (\). Other directories have file names followed by the abbreviation “dir” and are sometimes called *child directories*. Directories are limited in the number of files they can hold, which necessitates creating subdirectories.

Figure 8-19 shows directories or files of general data.

09-30-97 03:18p				Directory C:\WP51\DOC*.*			
Free: 74,334,208							
Current		<Dir>		.. Parent		<Dir>	
MC	.	2,616	01-02-97 09:41a	ODHV1CH1.		76,366	07-20-95 03:35p
ODHV1CH2.		99,135	07-20-95 03:33p	ODHV1CH3.		36,941	07-20-95 03:36p
ODHV1CH4.		75,066	07-20-95 03:37p	ODHV1CH5.		57,737	07-20-95 03:38p
ODHV2CH1.		15,955	07-20-95 03:39p	ODHV2CH2.		16,305	07-20-95 03:41p
ODHV2CH3.		16,451	07-20-95 03:42p	ODHV2CH4.		16,962	07-20-95 03:43p
ODHV2CH5.		15,814	07-20-95 03:44p	ODHV2CH6.		24,411	07-20-95 03:45p
ODHV3CH1.		21,782	07-21-95 11:09a	ODHV3CH2.		17,503	07-21-95 11:32a
ODHV3CH3.		20,881	07-21-95 01:13p	ODHV3CH4.		17,241	05-06-97 09:27a
ODHV3CH5.		20,097	07-24-95 08:59a	ODHV3CH6.		22,245	07-24-95 09:21a
ODHV3CH7.		24,199	07-24-95 09:55a	ODHV3CH8.		20,558	07-24-95 10:06a
ODHV4CH1.		28,444	07-24-95 11:05a	ODHV4CH2.		20,902	07-24-95 11:22a
ODHV4CH3.		17,717	07-24-95 01:22p	ODHV4CH4.		14,510	07-24-95 01:28p

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Figure 8-19.—A subdirectory from C:Drive.

Continued on next page

Directories and Subdirectories, Continued

Subdirectories or folders

Subdirectories or folders are files that have specific purposes or relationships. Subdirectories can contain anything and may become very large. Use subdirectories when several people use one computer and need to keep separate data files. Subdirectories are also used to keep different types of documents together or to separate files by commands.

Figure 8-20 shows how subdirectories or folders of specific data form a hierarchal system called a *directory tree*.

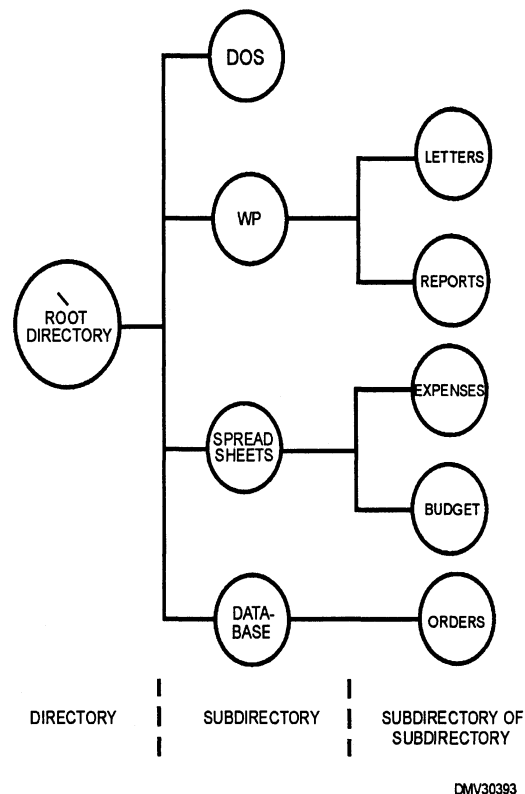


Figure 8-20.—Directory trees.

Continued on next page

Directories and Subdirectories, Continued

Naming a file or folder

The name of directories or files and subdirectories or folders should reflect information that identifies the contents of the document. A file name consists of eight characters and may have a suffix or three-character extension after a period. The three-character extension may indicate the type of document in the file. For example, ART indicates that the file contains artwork rather than text (TXT). The three-character extension may also indicate the format of the document. Do not use punctuation in file names. Use the *Department of the Navy, Standard Subject Identification Codes (SSIC)*, *SECNAVINST 5210.11*, to assign file names with some uniformity.

File listings

You can access files in directories or subdirectories by displaying the list of files on the monitor screen or by printing hard copies. Store hard copy lists of the directory with the disk. File lists show the name of the file, how many bytes in the file, and the date of creation or modification. When the list of files are on-screen, options appear that allow you to OPEN, RETRIEVE, DELETE, MOVE/RENAME, PRINT, LOOK, OTHER DIRECTORY, COPY, FIND, or NAME SEARCH files.

OPEN: Opening files displays the document onscreen and allows you full editing capabilities in the file. When editing is complete, save the file before closing it or the changes may not be saved. A prompt to save before closing a file normally appears on screen.

RETRIEVE: Retrieving a document displays the information on the screen and allows you to modify data. Save all modifications before closing the file or the document may not save the changes.

DELETE: Selecting DELETE will remove the file from the root directory. If files contain subdirectories, a prompt informs you that the file cannot be deleted without deleting the subdirectories first. Many programs will ask you to confirm your request to delete a file.

MOVE/RENAME: Use the MOVE/RENAME option to move a file to another disk or drive or to rename a file.

PRINT: Selecting PRINT from the LIST FILE without selecting a particular file prints the file list itself. To print directories from the root directory, you must select them.

Continued on next page

Directories and Subdirectories, Continued

File listings (Continued)

LOOK: LOOK allows the system operator to view the selected document on the screen. You cannot make changes or modifications in this mode.

OTHER DIRECTORY: Using the option OTHER DIRECTORY elicits a prompt to indicate the desired directory. Once the computer knows which directory you desire, the file list for that directory appears on the screen.

COPY: To copy a file to another disk, select the file with the cursor and click on the COPY option. A prompt asks to what disk or drive to copy the information.

FIND: FIND and NAME SEARCH are very similar. If you know the document name or several key words or phrases, the software can search files until it finds a match.

NAME SEARCH: To find a particular file, some programs are capable of searching for files in several ways. Entering a few letters from the file name causes the program to look for any file name with those few letters. You can search by date or file/folder if you can remember the date you originally created the document or to which file or folder you saved the document. Some software programs are capable of searching for phrases within the text of documents.

Purging files

Purge old files from your working copy disks and hard drives weekly. Dispose of obsolete files by deleting them. Move infrequently required documents to finished media disks or disks set aside for archival purposes. Removing obsolete or excess files from working copy disks and hard drives reduces the time it takes the computer to scan and retrieve files speeding processing time.

Archiving

Archiving is saving infrequently used data on finished media disks or disks reserved for information only occasional required. For example, the ships Watch, Quarters, and Station Bill that is periodically updated and circulated would be better stored on finished media disks than on hard drives.

File Formats

Introduction

No one software program offers every option and you may want to move graphic files from one program to another to use other options. Proper file format is important if you plan to merge graphics into other software programs. Review software owner/operator manuals to identify formats the software supports for importation and exportation. Your graphics will not display or print if you save files in incompatible file formats.

File formats

File formats are machine languages that save each binary digit or bit in a file according to special codes that tell the program how to arrange and present the information. Special codes for one program are not necessarily the same special codes for other software. Two common ways files are saved to disks are by vector and raster bit maps.

VECTOR-BASED: Vector-based drawings or object-oriented graphics are plotted by a series of points that define paths for lines to follow. The points are the result of mathematical formulation and most vector-based software automatically recalculates subsequent changes. For this reason, vector-based drawings are simpler to edit than raster-based images. Vector images are defined by lines, shapes, color or fill pattern, and objects. Vector-based graphics printed or viewed on low resolution printers and screens, curves and circles appear mechanically awkward or jagged. The term for jagged edged lines is *pixilated*.

RASTER-BASED: Raster-based images are images created pixel by pixel within a matrix. Raster-based software automatically determines when and to what number to reduce pixels in a matrix. Vector-based bit maps can be “rasterized” or converted by a raster image processor (RIP) to raster bit maps. The purpose of conversion is to ensure reliable transport into the publishing software by dramatically increasing the dots per inch (dpi) resulting in very high resolution. Rasterizing images removes the jagged edges often associated with vector graphics reproduced at low resolution (lower dpi). Subsequent editing in raster-based software is often difficult and may require re-converting to vector-based software.

Continued on next page

File Formats, Continued

Saving file formats

The format graphics are saved in affects the resolution quality of the final product. Files saved in low-resolution do not produce professional quality graphics. Files saved in high-resolution file formats require software program compatibility to maintain high resolution or increase to very high resolution. Common file formats are the American Standard Code for Information Interchange (ASCII), the encapsulated postscript file format (EPS or EPSF), the tag image file format (TIFF), the raster image file format (RIFF), and the graphic images format (GIF). There are some file formats that are platform specific such as Amiga ILF/ILBN and Macpaint.

American Standard Code for Information Interchange (ASCII)

The American Standard Code for Information Interchange (ASCII) is a generic text-only format without special coding for attributes such as bolding, underline, and italicizing. You can open files saved in ASCII in any other program so long as you specify the format when opening the file or issue a special import command. ASCII does not handle graphics files.

Encapsulated postscript file formats (EPS or EPSF)

Encapsulated postscript file formats (EPS or EPSF) save graphics as high resolution images in color or black and white. EPS files consume more disk space than other file formats because they contain information required for color separation. Images saved as EPS files are particularly suited to high quality reproduction or commercial printing. EPS or EPSF is a vector-based format.

Tag Image File Format (TIF or TIFF)

Tag image file formats or TIFF is a common format for saving bit-mapped graphics. You can save any scanned line art or grey-scale halftone image in TIFF and import/export into desktop publishing programs or other graphics software for further manipulation. The TIFF file format is a vector-based format. TIFF is less capable as a format for color images than EPS.

Raster image file format (RIF or RIFF)

Raster image file formats (RIFF) is a PC image-editing program similar to TIFF in very high resolution. Vector-based formats may be converted to RIFF by a RIP.

Continued on next page

File Formats, Continued

Graphics images file format (GIF or GIFF)

GIF or graphic images file formats are display bit maps without the high resolution required for editing. GIF is used for display and exchange among users in subscription networks connecting vast networks of computers such as the Internet and the world wide web.

Joint photographic experts group (JPEG or JPG)

JPEG or JPG is a standardized image compression mechanism written by the Joint Photographic Experts Group for maximizing file compression of files intended for use as a Usenet or world wide web photo format. JPEG works best with full-color or grey-scale images such as photographs and continuous-tone art. JPEG has difficulty reproducing sharp lines and extreme contrasts. JPEG files also display a loss in image quality with subsequent conversions.

File format suffixes

Common three-letter file format extensions attached to file names include the suffixes in the following chart:

Format	Suffixes
American Standard Code for Information Interchange (ASCII)	.txt
Encapsulated Postscript File Formats (EPSF or EPSF)	.eps
Graphics Image File Format (GIF or GIFF)	.gif
Joint Photographic Experts Group (JPEG or JPG)	.jpg
Raster Image File Format (RIF or RIFF)	.rif
Tagged Image File Format (TIF or TIFF)	.tif

File compression

When documents or images require more storage space than the disk has, compress the file to fit. Compressing files is a way to store back-up material, free hard drive space, and save time transferring files. Many programs are able to compress files and there are specific file compression software programs available. Compressed files must be expanded before use. Compressing and expanding files does not affect resolution. File compression is sometimes referred to as stuffing and unstuffing.

Word Processing Software

Introduction

Many computers in the Navy have some sort of word processing software installed. For DMs, word processing software composes flawless text for subsequent reproduction. Because there is a variety of text-handling programs in several different versions in the fleet, no attempt to address specific programs is made in this training manual. You must become familiar with your work center computer and the word processing software installed on it.

Word processing programs

Word processing programs create flawless documents by using extensive and sophisticated editing features that typewriters cannot offer. Editing features distinguish one word processing program from another. No one program contains all features. As word processing programs evolve, however, certain features become common.

Word processing software manuals

The most valuable source of reference for your computer and software package is the owner/operator manual. These manuals are meant to be used for reference daily. Keep the manuals handy. It takes a lot of experience before you can disregard the manual without losing computer capability.

Word processing software features

Word processing software features are standardizing as the medium evolves, but, part of evolution is the creation of and streamlined access to new features. Features that once took several keystrokes to access now have their own icon on toolbars and require only that you point and click the mouse.

Document formatting features

Before entering text into documents, set document parameters regarding margins, justification, text centering, setting text flush, setting headers, footers, endnotes, and page numbers. Define a document before you begin. Failure to define document parameters creates major control problems during corrections or revisions. Modifying documents with undefined parameters results in text splattered across the page and irregular margins. This is frustrating and confusing when you are trying to make corrections.

Graphics Software

Introduction	Software programs that are highly regarded for text-handling abilities may not be appropriate software for handling artwork or images. To achieve the flexibility and resolution required to create good graphics, you need graphics software programs. Since so many graphics software programs are used in the Navy; this section addresses them only in general terms.
Graphics software programs	Graphics software programs are intended primarily for the creation and modification of graphics images. The three types of graphics software programs are image-creation (drawing, animation, drafting, and painting), image-editing (photographic), and image-presentation (briefing or training) programs.
Graphics software program manuals	Graphics software programs have so many features and options that an owner/operator manual is invaluable. Study software manuals and complete any exercises and recommended applications. Keep software manuals near computer work stations for easy reference.
Graphic software programs memory	Memory requirements for graphic software programs exceed those for text-handling programs. Memory chips on CPUs store bytes of information in kilobyte (KB), megabyte (MB); or gigabyte (GB) increments. Random Access Memory (RAM) memory chips determine what programs your computer is capable of running and how much information you are able to store. Graphics software requires more RAM than text programs. When purchasing software to increase graphics capabilities, compare the memory capacity in the CPU to the memory requirements of the intended purchase. Add more memory chips to the CPU if required to handle the new software.
Image-creation programs	Image-creation programs are programs that allow the SYSOP to create and manipulate images. Image-creation software programs include draw, paint, animation, and drafting software programs. The images may be initially scanned into memory or created solely by using options available in the software program. Drawing and painting software is generally raster-based and animation and drafting programs are vector-based programs.

Continued on next page

Graphics Software, Continued

Image-editing programs

Image-editing programs are used primarily with preexisting images such as pictures and photographs, scanned into memory for manipulation. Image-editing software shares many of the features and options available in image-creation programs with higher resolution and greater pixel manipulation. Image-editing programs often have greater selections of blending tools and stylizing filters than image-creation programs.

Image-presentation programs

Image-presentation programs offer cookbook solutions to the task of preparing information for presentation in briefs or in training environments. You select slide or viewgraph formats from menus in memory and plug information into it. You may import photographs and illustrations through scanners or select from stocks of copyright-free artwork held in memory as clipart. You program how the image appears and disappears from the screen and for how long the slide remains on the screen.

Common graphics software features

Features common to graphic software applications include the use of layering, movement tools, auto-trace tools, shape tools, rendering tools, blending tools, and stylizing filters. Each software program has its own set of tools. Your software program may have any or all of the following listed tools and features. You may have additional features that are program or platform specific but, whatever features and tools your software offers, get to know and understand how to use them.

Layering

Layering is creating art in stages or on electronic overlays. Every element of a design is placed on separate layers. Because the number of layers can become excessive, it is a good idea to combine or group layers that contain small design elements. Any layers so grouped may also be ungrouped. Most graphics programs create art in multiple layers with the exception of painting programs, which may use only one layer. Working in multiple layers gives you complete control of every drawing element and is convenient when preparing color separation work or isolating segments for changes. The disadvantage of multiple layers is that it complicates the creation process by making it difficult to select the appropriate layer to change and to assess how changes made affect previous and subsequent layers.

Continued on next page

Graphics Software, Continued

Movement or select tools

Movement or select tools extract and move image segments into the electronic clipboard or scrapboard for later recall and repositioning. Movement tool icons may resemble lassos (rope) or marquees (rectangle). Movement tools select pixilated images with some surrounding white space or white space enclosed within the pixilated image.

Isolating tools

GROUP, UNGROUP, and ISOLATE are forms of movement or select tools that allow you to separate design elements for detailed alterations.

GROUP: GROUP combines design elements from different layers onto one layer. Reducing the number of layers in illustrations simplifies image construction and occupies less memory space.

UNGROUP or ISOLATE: UNGROUP or ISOLATE isolates design elements for further manipulation. At times, you may have to ungroup elements, edit, then regroup them to successfully modify illustrations.

Auto-tracing tools

Auto-tracing tools are quick ways to repeat images without redrawing them. Auto-trace tools automatically plot vectors of traced images and convert them into drawn lines. You may have to refine and sharpen the traced lines before using them in your artwork.

Shape tools

Shape tools easily create shapes on screens by clicking a shape icon. You may then click and drag the shape on the screen until the shape reaches the desired size and form. Shape tools create circles, ovals or ellipses, squares or rectangles, or trapezoids and polygons. Shape tools draw precise lines, Bézier curves, and freehand lines. Shape tools that push shape limitations are SKEW, REFLECT, and SPIN or FREE ROTATION tools. SKEW shape tools angularly distort images much the way italicizing distorts text. REFLECT creates mirror images. SPIN or FREE ROTATION rotates design elements around a stationary point.

Continued on next page

Graphics Software, Continued

Rendering tools Rendering tools are electronic replicas of traditional drawing tools for drawing, tracing, and line work. To select rendering tools, click on the icon resembling the traditional drawing tool. . The input device (mouse, trackball, electronic tablet, or pen) used to draw imitates the effect of the traditional drawing tool. Some common rendering tools are the PENCIL, BRUSH, AIRBRUSH, ERASER, BUCKET, BLEND, EYEDROPPER, and TYPE.

PENCIL: With the PENCIL tool, you can draw lines resembling pencil strokes. You can change the width of the pencil stroke. Click the icon that resembles a pencil to access.

BRUSH: The effects of brush strokes are possible while working' with the tool BRUSH. The width of brush strokes is variable.

AIRBRUSH: The AIRBRUSH tool applies pigments in evenly sprayed patterns. The width of the airbrush stroke and the density of the pigment are adjustable.

Figure 8-21 illustrates the differences between rendering tools.

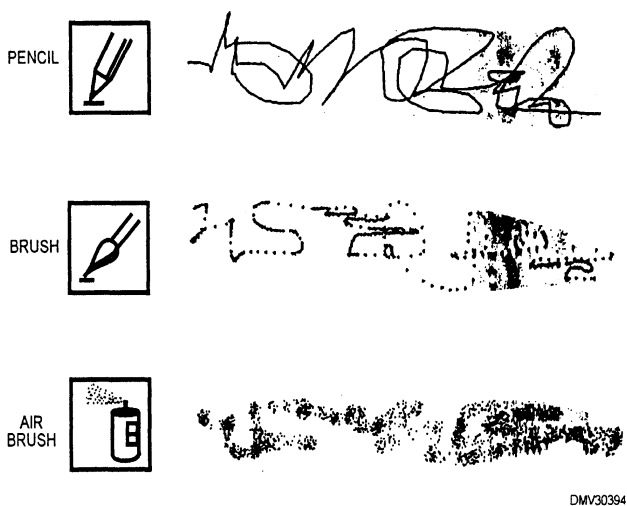


Figure 8-21.—The difference between the pencil, brush, and airbrush rendering tool.

Continued on next page

Graphics Software, Continued

Rendering tools (Continued)

ERASER: The ERASER tool removes strokes or pigmentation from areas much as pencil erasers remove graphite. By selecting ERASER, you erase everything you drag the eraser over.

BUCKET: The BUCKET icon appears as a bucket of pouring pigment and is used to completely fill enclosed spaces with pigment or patterns. If the object is not fully enclosed, the fill color or pattern spills into white spaces surrounding the object. Make sure the object you desire to pour pigmentation into is fully enclosed by pixels.

Figure 8-22 shows a fully enclosed object and a partially enclosed object filled with pattern by the BUCKET tool.

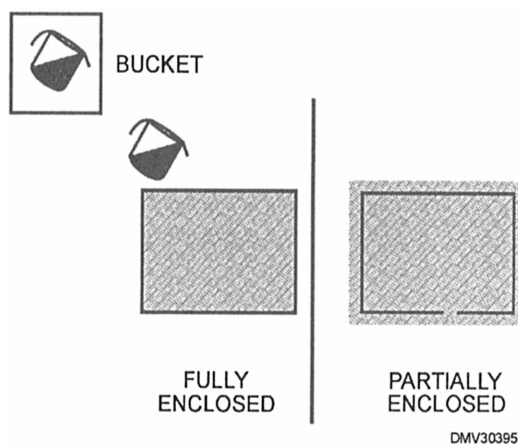


Figure 8-22.—The bucket tool fills objects with color or patterns.

BLEND: BLEND tools blur the distinction between one color or pattern and the next. Use a BLEND tool when you do not want distinct lines.

EYEDROPPER: Use the EYEDROPPER tool to mix and match any color on the illustration by extracting a sample of the original color with the eyedropper.

TYPE: Integrate text directly into graphic images without importing it from other software. Graphic programs offer a variety of fonts and sizes with the ability to outline, bold, shadow, and color letters.

Continued on next page

Graphics Software, Continued

Blending tools Blending tools blur the distinct lines between colors and patterns. They make sharp lines fuzzy and can zoom in and out of images. Some common blending tools are FEATHER, DEFRINGE, CLONE or RUBBERSTAMP, SMUDGE, CROPPER, GRABBER, ZOOM, PANNING, and SHARPEN.

FEATHER or DEFRINGE: Feathering or defringing creates a gradual transition between pixels on the edges of selected objects and backgrounds. This is useful when combining objects from different images to form one composition.

CLONE or RUBBERSTAMP: With CLONE or RUBBERSTAMP, you may copy objects, colors, or patterns and place them in other areas of the image. Retouching damaged areas on photographs or continuous-tone originals is easily done with this tool.

SMUDGE: The SMUDGE tools smears adjoining pixels with similar characteristics much like dragging fingers through wet paint smears color into the surrounding areas. This tool is excellent for softening unattractive features in portraiture used in Welcome Aboard biographies.

CROPPER: CROPPER tools crop selected portions of images and discard the rest.

GRABBER: To move objects larger than your open onscreen window, use the GRABBER tool and push or pull the image around on the screen.

ZOOM: Magnification of images or selected portions of images is possible with the ZOOM tool. This tool also pushes selected images into the background. Use this tool when determining the best composition.

PANNING: Moving from side-to-side across images like motion picture or video cameras is an effect accomplished by the PANNING tool.

SHARPEN: The SHARPEN tool increases or decreases image focus by altering the contrast in surrounding pixels.

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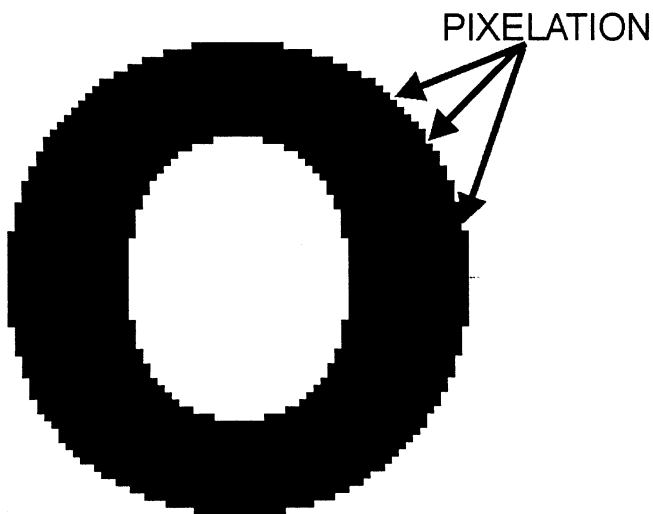
Graphics Software, Continued

Stylizing filters

Stylizing filters are the whistles and bugles special effects of graphics software programs. Stylizing filters modify entire pixel maps. Some common stylizing filters include PIXELATION, WRAPPING or ENCRUSTING, STENCIL, DRAPING, TILING, POSTERIZE, THRESHOLDING, FACETING, CRYSTALLIZING, MOSAIC, NOISE, DIFFUSE, EMBOSS, FIND EDGES/TRACE CONTOUR, FRAGMENT, POINTILLIST or IMPRESSIONIST, SOLARIZE, SHARPEN, BLUR, and DISTORTION.

PIXELATION: PIXELATION is the selection of big or small pixels. Large pixels create jagged edges and amplify the computer-generated appearance of drawn objects.

Figure 8-23 shows pixelation on a circular form.



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Figure 8-23.—Pixelation on the circular form of the letter “O”.

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Graphics Software, Continued

Stylizing filters (Continued)

WRAPPING or ENCRUSTING: WRAPPING or ENCRUSTING contours colors and patterns around shapes.

Figure 8-24 shows the effects of wrapping pattern around a sphere.



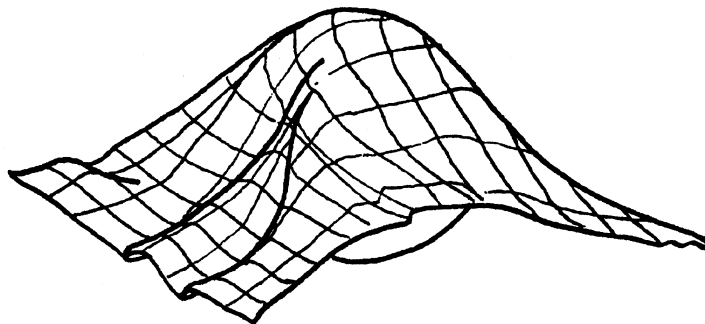
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Figure 8-24.—A pattern wrapped around a sphere.

STENCIL: To lock all areas of your image together, use the STENCIL feature. STENCIL makes all areas of the image dependant on each other. This feature is sometimes referred to as color masking.

DRAPING: Adding a pattern to objects to resemble the drapes and folds in cloth is called DRAPING.

Figure 8-25 shows an example of draping pattern over a sphere.



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Figure 8-25.—Draping.

Continued on next page

Graphics software, Continued

Stylizing filters (Continued)

TILING: TILING creates patterns and saves them to tiles. Repeating pattern tile creates texture that you can add to any object.

POSTERIZE or SOLARIZE: Posterizing alters contrast levels in images into which you may add colors or patterns. SOLARIZE is similar to POSTERIZE except that the alteration approaches contrast extremes and the image remains monochromatic. These filters are useful for separating art for color reproduction or silk screenings.

THRESHOLDING: To reduce images to essential black-and-white areas, use the THRESHOLD command.

FACETING: Create blocks of like-colored pixels by using FACETING to group pixels together.

CRYSTALLIZING: CRYSTALLIZING arranges similarly colored pixels into polygonic or hexigonic shapes resembling cut stones.

MOSAIC: With MOSAIC, you can specify the size and position of blocks of pixels. This filter is useful and commonly used to obliterate identifiable features in photographs and television.

NOISE: The NOISE filter replicates television transmission noise by adding random patterns to illustrations.

Figure 8-26 shows NOISE.



DMV30399

Figure 8-26.—Noise

Continued on next page

Graphics Software, Continued

Stylizing filters (Continued)

DIFFUSE: DIFFUSE filters soften images to appear slightly out of focus.

EMBOSS: To impart three-dimensional effects to design elements, use EMBOSS. The affected elements appear lifted from the screen or paper surface.

FIND EDGES/TRACE CONTOUR: This filter reduces images to line drawings by tracing borders and outlines.

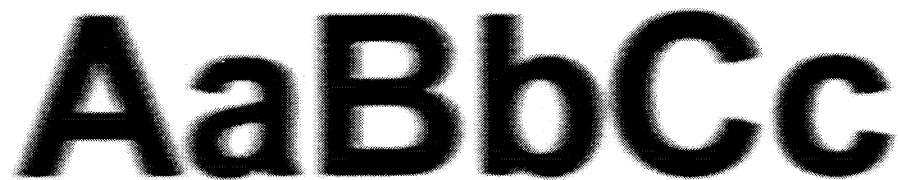
FRAGMENT: The FRAGMENT filter multiplies images and offsets them from each other.

POINTILLIST or IMPRESSIONIST: The POINTILLIST or IMPRESSIONIST filters convert illustrations and paintings into thousands of colored dots that imitate the paintings of the mid- to late-nineteenth century painting style of the same name.

SHARPEN: Use this command to slightly sharpen the outline of design elements or out-of-focus elements in photographs. SHARPEN filters may pixelate or degrade resolution when used excessively.

BLUR: The BLUR filter has multiple applications. Use BLUR to soften images or to softly haze backgrounds. Blur filters can be used to vignette images. BLUR can also create the appearance of sudden movement.

Figure 8-27 shows how BLUR filters can be used.



DMV30400

Figure 8-27.—Using a blur filter.

Continued on next page

Graphics Software, Continued

Stylizing filters (Continued)

DISTORTION: DISTORTION filters distort or alter objects, patterns, and textures. They come in a variety of special effects including PINCH, RIPPLE, SPHERIC, TWIRL, and WAVE. You can expect many more special effect filters to show up in more sophisticated software programs.

Figure 8-28 shows examples of some common distortion filters.



DMV30401

Figure 8-28.—Distortion filters.

Continued on next page

Graphics Software, Continued

Color capabilities

Using color graphics software programs requires more than 16 MB of RAM to run efficiently. Files saved in color are also memory hungry. The most basic color board is an 8-bit card supporting 256 colors onscreen simultaneously. Each bit receives eight bits of information to display a color. Colors boards containing 24-bits have the ability to produce 16.8 million onscreen colors. These 24-bit cards create continuous colors that blend smoothly. Increase shop versatility by installing a 2 MB 24-bit color card.

Color formats

Computer color can be created in RGB (Red, Green, and Blue), CYMK (Cyan, Yellow, Magenta, and Black), or Pantone color formats. RGB is the format normally used on cathode-ray tubes in computer monitors. Colors appear vivid and bright, but do not translate well into printed images. CYMK is the format used when preparing artwork for print. CYMK color appears less intense. Convert RGB color imagery to the CYMK format before printing or initially create imagery in the CYMK color format. Pantone color is used for spot color and should not be used in four-color process printing.

Color special effects

Illustrations resembling the high resolution of fine color photographs are attainable using programmable color palettes. Onscreen color special effects filters make it easier to mimic traditional art media and substrate surfaces.

CHARCOAL: To subtly add shade to color, use the CHARCOAL tool. This replicates pastels in texture.

WETPAINT: This special effects tool keeps onscreen images fluid. Painted areas in WETPAINT remain moveable and you are able to manipulate the painted mass until saved.

OVERPAINT or UNDERPAINT: Similar to overpainting and under-painting in the traditional media of watercolor, oil, and acrylic pigments, the OVERPAINT or UNDERPAINT tools allow the application of colors over and under already existing color.

WASH, SHADE, or STAIN: These effects simulate glazing in traditional art media. Color applied by WASH, SHADE, or STAIN options appear in thin, transparent shades.

Continued on next page

Graphics Software, Continued

Color special effects (Continued)

COLOR CYCLING: To simulate movement in images created onscreen, try the COLOR CYCLING effect. Perceived movement is achieved by displaying pixels in set palettes or selected palettes in a rainbow-like gradient.

SMEAR: The SMEAR tool allows you to push and move colors and patterns around onscreen as if they were wet paint. The smudges, smears, and softened edges resemble the effects of pastels or impasto.

BRUSHES: More sophisticated image-editing software programs not only have brush and brush size selections but also are capable of being pressure sensitive. Some software offers bristly or smooth brush hairs for dry brush and smooth applications of pigments.

EFFECTS: To create more painterly effects, graphics software programs have pigment application effects resembling oil paint, pastel, felt tip, and colored pencil textures.

SURFACES: Just as media textures vary so can substrate surfaces. The SURFACES special effects options visually emboss images with substrate surface texture resembling canvas, rough and smooth Bristol board, linens, and weaves.

Working in color

Overuse or improper use of color is offensive. Practice the principles in color theory.

To increase resolution in final printed products, create the art in DPI (dots per inch) at twice the intended printed lines per inch (LPI). The higher the resolution, the fewer problems you have with moire and tonal patterns.

Work with color by creating masters in monochrome first. Once you save the monochrome images, experiment with color variations on copies. This develops a sense of the most economical and effective use of color.

Periodically save line drawings at various stages of completeness as separate files. Should you make mistakes or change your mind about applying a particular color or pattern, return to the last line drawing saved.

Desktop Publishing Software

Introduction

DMs may need to become familiar with desktop publishing software, particularly in the absence of Lithographer's Mates. Desktop publishing is used for Welcome Aboard brochures, local instructions, newsletters, Personnel Qualification Standards (PQS), forms, and training manuals such as this one, which uses a user friendly desktop publishing program that provides easy graphics importation.

Desktop publishing software

Desktop publishing software is software programs that combine the textural manipulation of word processing software with graphics importation for subsequent reproduction. Common categories within desktop publishing programs include text composition, page layout, and graphics.

COMPOSITION: Composition defines the sizes and styles of type, the amount of space between horizontal letters and vertical lines, and the coding of the text copy to meet standards. You can edit text directly or input text from documents created in word processing programs imported into DTP software.

LAYOUT: Layout involves the arrangement of text and graphics on the page. Electronic pasting moves text from one position to another and incorporates graphics into text. Some features include multiple columns, column widths, and gutter space manipulation, printing vertically or horizontally on a page, automatic copyfitting, automatic page numbering, and adding headers and footers.

GRAPHICS: DTP features may scan or import illustrations and graphics either from hard copy or digital data. You can alter or edit images by shrinking or expanding them and create layered four-plate color separations for color reproduction.

Desktop publishing software programs sometimes use tags, frames, and style sheets to logically divide tasks involved in composing, layout, and graphics importation to create camera-ready copy.

Continued on next page

Desktop Publishing Software, Continued

Desktop publishing software manuals

Desktop publishing programs specifically code documents for print. Desktop publishing programs (DTP) tend to be more complicated and precise than word processing or graphics software programs. It is imperative to keep DTP manuals near the computer for continual reference. Incorrect document coding may cause printing errors in the finished product.

Tags

Tags are a group of selected stylistic and typographical attributes that define the appearance or style of paragraphs. The style and topographic attributes include letter style or font, alignment, spacing, breaks, tab sets, special effects, attribute overrides, and paragraph typography. You may also select ruling lines, boxing, or colors. All selected specifications are saved as tags and applied to text in a current document or imported into other documents. Practice good design principles and avoid mixing too many fonts or design elements. Tags must be named for identification and later recall. Name tags according to hierarchy, type, group, or alphabet with a 13-character name.

Frames

Frames are the basic element in the creation of desktop published documents. Frames are box outlines that hold text on pages by defining page size, orientation, margins, and columns. Do not use frames if tags will do the same job because frames require manual manipulation and tags do not. You can create, layer, or delete frames at will or use frames as place holders for inserting graphics. More than one frame may fit on a page simultaneously.

Style sheets

Style sheets are collections of tags, frames, and other information pertinent to the layout of a page. Style sheets determine the appearance of the printed page. When you create style sheets, name and identify them as style sheets with the suffix STY. You may use only one style sheet for each document, but you may switch style sheets in the middle of documents. Switching style sheets allows you to view documents in different presentations and select the best design.

Web Pages

Introduction

Designing web pages is currently one of the fastest growing functions of the Illustrator Draftsman. The Navy is beginning to see the web as an important part of its public image. In efforts to generate interest in the Navy, in individual commands, and in the mission of each command, every command is creating web pages for public view. Increasingly sophisticated web pages require thoughtful and thorough planning by the DM. To view the U. S. Navy web page, enter the Internet address of <http://www.navy.mil>. To review the latest advancement requirements in the Illustrator Draftsman rate, enter the Internet address of <http://www.cnet.navy.mil/netpdtc/>.

Web pages

A web page is a computer-generated public introduction to an organization,, command, or unit distributed worldwide via Internet. Web pages also advertise products and provide information. Worldwide Internet transmission is on a network termed the world wide web (WWW). Web pages may contain internal and external links offering additional information and options to viewers.

Web page design

Effective web design requires designers to consider fundamentals such as who the web page is trying to reach and what are they trying to communicate. How much or how little information is appropriate? How often will web pages require updating? Will web pages include schedules or phone directories? Individuals who visit or “hit” web sites want to access information quickly. Plan web sites to logically inform and present a positive image.

Web links

Web links are external and internal transfers to other web sites. External links lead web users away from the main web page. On a command web page, for example, external links may lead the viewer to web sites such as base housing, BEQs, and other Navy web pages. Internal links lead viewers further inside the command into such areas as departments, offices, and shops. Reserve most links for internal transfers to keep web users focused on the command web site. Do not place information on web pages that is subject to Privacy Act protection or in violation of security regulations.

Continued on next page

Web Pages, Continued

Frequently Asked Questions (FAQs)

Frequently Asked Questions (FAQs) are web pages that attempt to answer questions that might reasonably be asked by individuals seeking information on the main web page topic. Questions on command web FAQ pages may relate to command mission, organizational structure, projected deployment schedules, or ship construction statistics. Web users accessing command web pages may be potential shipmates evaluating the desirability of duty at the command. Append FAQs as an internal link to command web pages and update information regularly.

Web page parameters

There are some elements in designing web pages over which you have no control. These elements include the inability to alter page width, texture, and typography. You have no control over the publishing medium or analogous characteristics such as monitor contrast, brightness, resolution, and color settings. You also do not know the speed of the receiving station or the type of browser software (the program used to access a web site). All of these elements affect the way your web site is transmitted and received.

Designing web pages

The keys to designing effective web pages are simplicity and logic. Gather all information beforehand and script it into a logical presentation. Delete nonessential information. Use small, easily drawn icons and simple color palettes. Determine whether or not the commanding officer, executive officer, or command master chief want to address the web with an official Welcome Aboard or command introduction. Canvas the Ombudsman to see if he or she would like the opportunity to share information on an internal web page link. Plan web pages to allow web cruisers to revisit or jump from one link to another smoothly. A typical sequence for command web pages and internal links may be command, commanding officer (or executive officer) welcome, mission, statistics, deployment schedule, command master chief, FAQs, and Ombudsman information.

Web page language

All web pages are created in Hyper-Text Markup Language (HTML), the standard language format for creating documents, and transferred between web sites by hypertext transfer protocol (http). Some software program screen displays allow you to construct information in a more what you see is what you get (WYSIWYG) fashion.

Continued on next page

Web Pages, Continued

Web addresses A web address is an identification address assigned to a computer. Most web addresses begin with “http://” because that is how information moves on the web. The next part of the address usually contains “www” to identify the address as a World Wide Web address. The site specific (command) portion of the address follows “www” and may consist of the command acronym. The web address terminates in a period and suffix (abbreviation) that identifies the domain or type of computer using the address. Notice that web addresses are in lowercase letters. The following table lists common domains.

Domain	Abbreviation
.com	Commercial
.edu	Educational
.gov	Government
.mil	Military
.net	Freenet
.org	Organizational

Figure 8-29 shows typical web addresses.

`http://www.whitehouse.gov`

`http://www.voyager.paramount.com`

`http://www.navy.mil`

DMV/30402

Figure 8-29.—Typical web addresses.

Reviewing web Pages

Once you create a web page, view it using as many different browsers as you can. The web page content may disarrange when translated and viewed with other browsers. You can correct or adjust distortions by modifying the HTML code.

Summary

Review

This chapter is an overview of software programs, features, options, and commands common to Navy graphics shops in the fleet. There is no attempt to identify specific programs or to support one program over another. Software and disk security emphasizes the importance to national security of proper disk handling. The virus segment helps identify and avoid importing problems into the system. Familiarity with features, options, and commands common to many software programs should encourage exploration in program specific attributes. The segments on directories and subdirectories and file formats introduce common file construction. Discussions on word processing, graphics, and desktop publishing software are necessarily generic to avoid the pitfalls of locking onto one specific program. Web page construction represents your command to the world and deserves careful planning and execution.

Comments

Computers play an increasingly important part in your life as a DM with computer-generated imagery as one of the fastest growing commercial fields in the world today. Experiment with the software programs on your work center computer. Your attitude toward computers and your ability to work with them may determine your future success as a DM and the future of the rate in the Navy. Stay abreast of developments. To create successful computer-generated layouts and graphics still requires a traditional foundation in draftsmanship, composition, color harmony, value, texture, and light. Without the knowledge of graphic design principles, computer-generated art approaches technological sterility and discord. Cultivate applications for computer-generated imagery in your command. Aggressively seek and take responsibility for web page construction and other potential graphic applications in your command to keep the rate alive.

APPENDIX I

GLOSSARY

Glossary

Introduction

One important key to success in any technical rate is mastery of the language associated with it. Learn the glossary as an integral part of your learning process. Use the terms other professionals are using in your field.

A

ACCENT LIGHT—A light that highlights or emphasizes the subject in a scene.

ACETATE—Tough, transparent, or semitransparent sheets available in various thicknesses used as overlays in color separation, friskets in retouching, cels for animated drawings, and displays. Treated acetate readily accepts ink and paint.

ACHROMATIC—Black, white, and the grays in between.

ACRYLIC PAINTS—See POLYMER.

ACTINIC LIGHT—The short waves of the light spectrum (green, blue, and ultraviolet) that cause chemical changes in light-sensitive photographic emulsions.

ACTION LINES—Extra lines drawn around or following a cartoon figure or object to emphasize motion.

ACTIVATOR—The solution or chemical that starts the reaction of the developing agent in a photosensitized emulsion.

ADDITIVE PROCESS—A process that produces white light by starting with darkness and combining colored light.

ADHESIVE—(1) A gelatin or casein used as a binder in pigment; (2) A chemical compound used as a glue.

Continued on next page

Glossary, Continued

A (Continued)

ADVANCING COLORS—Colors that appear to come forward, such as red, yellow, and orange.

AESTHETIC—Pertaining to the beautiful, particularly in art.

AGATE—Type size of 5 ½ points.

AIRBRUSH—An atomizer that applies a fine spray of paint under pressure from a tank of compressed air or carbonic gas.

AIRBRUSHING—Using an airbrush to create art or improve the appearance of art.

ANALOGOUS COLORS—Colors closely related to one another on a color wheel, such as blue, blue-green, and green.

ANATOMY—The bone and muscle structure of humans and animals as it affects the appearance of surface forms and contours.

ANGLE—A figure formed by two lines or planes extending from, or diverging at, the same point.

ANHYDROUS AMMONIA SYSTEM—A system that uses a mixture of water and ammonia in the developing section of some whiteprint machines.

ANILINE COLORS—Brilliant colors derived from coal tar that tend to fade in time.

ANIMATED CARTOON—A cartoon drawn in a series of progressive actions to give the effect of continuous movement.

ANIMATION—Sequentially drawn pictures displaying a range of motion which, when viewed in rapid succession, appear to be moving.

ALIGNED SECTION—A sectional view that revolves some internal features into or out of the plane of view.

Continued on next page

Glossary, Continued

-
- A (Continued)** **AMERICAN STANDARDS ASSOCIATION**—*Also called ASA. See ISO or EXPOSURE INDEX.*
- ANTIQUE STOCK**—A rough-surfaced paper, such as wove or laid.
- APERTURE**—An opening behind the lens that allows exposure to one frame of film.
- APPLICATION BLOCK**—The part of a drawing of a subassembly, showing the reference number for the drawing of the assembly or adjacent subassembly.
- ARC**—A portion of a curved line.
- ARC LAMP**—A light source resulting from the application of current to two carbon electrodes that form an electric ‘arc.
- ARCHITECT’S SCALE**—A scale used when dimensions or measurements represent feet and inches.
- AREA (PICTURE)**—The flat surface within the border of a picture.
- ARROWHEAD**—An indicator shaped like an elongated triangle used at the end of a lead line to direct attention to an object or a point of reference.
- ART**—Any copy other than text; any photograph, painting, or drawing in line, halftone, or continuous tone.
- ART BRUSHES**—*See BRUSHES.*
- ART GUM**—A soft, grit-free eraser used to clean drawings and remove unwanted pencil lines.
- ARTIST’S BOARD**—*See ILLUSTRATION BOARD.*
- ARTWORK**—Illustrations, drawings, photographs, renderings, paintings, sketches, and copy.
-

Continued on next page

Glossary, Continued

A (Continued)

ASCENDERS—The part of lowercase letters that project above the main body waistline, such as h, d, and f.

ASPECT RATIO—The proportion of the media format that governs the size of the original artwork.

ASSEMBLE EDITING—Putting scenes in chronological or progressive order.

ASYMMETRICAL—An informal balance of objects or sections of equal mass and weight on each side of a center line.

ATTITUDE—A position or action of the body or part of the body that approximates an emotion, character, or personality.

ATTRIBUTES OF MEDIA—Specific characteristics of a chosen medium.

AUDIO—Sound that is heard.

AUDIO-TUTORIAL—*Also called* AT. Instructions given to a student that uses primarily sound.

AUDITABLE PICTURE ADVANCE SIGNAL—An audible signal that indicates the moment to change the image to another.

AUTO-TRACE—A software option that allows the tracing of one image into another file option.

AUXILIARY VIEW—A drawing showing the true shape of objects that have features not parallel to the three principal planes of projection.

AXONOMETRIC PROJECTION—A drawing that shows the inclined position of an object in an isometric, dimetric, or trimetric format.

B

BACKGROUND ART—Design, texture, pattern, or other form of artwork used to create a background effect for type and illustration.

Continued on next page

Glossary, Continued

B (Continued)

BACKUP—The registration of two sides of a printed sheet.

BALANCE—A harmonious arrangement of the various components in a picture plane in a symmetrical (formal) or asymmetrical (informal) format.

BALL-AND-SOCKET JOINT—A flexible joint that rotates in all directions.

BALLOON—(1) A space containing the words spoken by cartoon characters; (2) A distortable shape used as a base to draw a cartoon head.

BALLOON LETTERING—Informal, single-stroke lettering used in comic strip balloons.

BAR CHART—A graphic representation comparing numerical values by means of rectangles of equal width.

BASE ART—*Also called BASIC ART and BLACK ART. See BLACK ART.*

BEADED SCREEN—A screen comprised of glass or plastic beads that reflect light from a projected image.

BEAM COMPASS—A compass capable of drawing circles and arcs that exceed the limits of a standard compass.

BEND ALLOWANCE—An additional amount of metal used in a bend in metal fabrication.

BENDAY—Mechanical shading applied to artwork to give a variety of tones to line drawings. Benday is named for its inventor, Benjamin Day.

BÉLZIER CURVES—A computer tool that draws precise curves with great accuracy.

BILL OF MATERIALS—A list of standard parts or raw materials needed to fabricate items.

Continued on next page

Glossary, Continued

B (Continued)

BINDER—An adhesive, coagulate, reducer, or extender added to pigments to maintain consistency, to promote adhesion, and to facilitate application.

BISECT—To divide into two equal parts.

BIT—The smallest unit of electronic information a computer can handle.

BIT MAP—*Also called* PIXEL MAP. A matrix of dots or pixels.

BLACK ART—*Also called* BASE ART. Art used in making process plates for illustrations of two or more colors.

BLACK-AND-WHITE—(1) Line art executed in a black-and-white medium only; (2) Continuous-tone art executed in black, white, and intermediate tones.

BLACK PATCH—A black masking patch pasted into the exact size and location on artwork where a photograph is to appear on the reproduction copy.

BLEED—The borders on the artwork and printing plate that extend beyond the final trimmed edge of the sheet.

BLENDING—Mixing or incorporating one color or tone with another.

BLOCKING IN—Indicating the broad outline of objects or shapes in a picture using preliminary lines.

BLOCK OUT—Eliminating an unwanted section of a picture.

BLOWUP—An enlargement.

BLUEPRINT—A direct, positive print made on chemically treated paper from a translucent or transparent drawing.

BOARD—Any heavy material used for mounting art or making displays.

Continued on next page

Glossary, Continued

- B (Continued)**
- BOARD ART**—Any artwork mounted on heavy board stock.
- BODY TYPE**—Type used for the main body of text in printed matter.
- BOLDFACE**—Type emphasized by darkening or increasing letter weight.
- BOOKLET**—A pamphlet bound within paper covers.
- BOOT-UP**—Start-up of the computer.
- BONE**—An instrument with a plastic, agate, or metal tip used for burnishing shading sheets, pressure-sensitive letters, and paste-ups.
- BORDER AREA**—The areas around a graphic that represents a protective perimeter.
- BOUNCE LIGHT**—Lighting set up to reflect from nearby surfaces onto a subject.
- BOURGES PROCESS**—A method of color separation using prepared colored or toned papers or acetate sheets.
- BOW INSTRUMENTS**—Drafting tools that draw circles and arcs less than one inch in diameter.
- BOX**—To enclose with borders or rules.
- BREAK LINE**—Lines to reduce the graphic size of an object, generally to conserve paper space.
- BRIEFING CHART**—*Also called BRIEFING PAD.* A visual aid that presents information on large paper or board.
- BRIGHT**—A short haired, flat, chisel-shaped brush.
- BRISTLE.**—A hog hair brush used primarily in oil painting.
-

Continued on next page

Glossary, Continued

- B (Continued)** **BRISTOL BOARD**—A drawing surface made of fine, tough, flexible cardboard available in several thicknesses and in a variety of surfaces.
- BROADSIDE**—*Also called* BROADSHEET. A large, folded advertising piece.
- BROCHURE**—A bound pamphlet.
- BROKEN COLOR**—Two or more colors applied simultaneously to artwork without prior mixing or blending.
- BROKEN OUT SECTION**—An auxiliary view used when a partial view of an internal feature is insufficient.
- BROWNPRINT**—A photographic print or silverprint that produces a brown image.
- BRUSHES**—A collection of bristles or hairs used to apply pigment and glues.
- BULLET**—A symbol (●) used to preface listed items.
- BURNISH**—The application of pressure to secure paste-ups, shading sheets, and lettering to artwork.
- BURNISHER**—*Also called* BONE. An instrument made of plastic, wood, glass, metal, stone, or ivory used to flatten, smooth, or polish a surface with hand pressure.
- BUSY**—Excessive or competing detail.
- BUTTON BAR**—*Also called* TOOL BOX. A program specific legend of options available to a computer user.
-

Continued on next page

Glossary, Continued

C

CABINET PROJECTION—A type of oblique drawing with the angled receding lines drawn to one-half scale.

CALLOUT—To call attention to a part or item in an illustration.

CAMCORDER—A video camera and recorder in one unit.

CAMEO PAPER—Paper of a dull, smooth finish used frequently for carbon and graphite pencil drawings.

CAMERA LUCIDA—*Also called LACEY LUCY.* An instrument with prism lenses used for enlarging or reducing artwork.

CAMERA-READY COPY—See REPRODUCTION COPY.

CANVAS—A surface made of cloth, usually cotton or linen, for painting.

CANVAS BOARD—Cardboard covered with cotton or linen used as a surface for painting.

CANVASKIN—A paper with a textured surface resembling canvas.

CAPTION—Any descriptive heading or title for an illustration or table.

CARBON PENCIL—Pressed carbon in a wood casing.

CARICATURE—The deliberate exaggeration and distortion of prominent features or mannerisms.

CARPENTER'S PENCIL—A wide, flat lead pencil ideal for chisel point lettering or laying in broad tones.

CARTOON—A comic or satiric drawing.

CARTOUCHE—A scroll-like design used ornamentally in printing or hand lettering.

Continued on next page

Glossary, Continued

- C (Continued)** **CASEIN**—A curd of milk and lime used as a binder in tempura paint.
- CAVALIER PROJECTION**—A form of oblique drawing with the receding lines drawn full scale at 45° to the orthographic front view.
- CD**—See COMPACT DISK.
- CD ROM**—See COMPACT DISK READ-ONLY MEMORY.
- CEL**—Acetate overlays used in television art and animation.
- CEL LEVEL**—The number of cels placed one over another on the same background and photographed at the same time.
- CENTER DISK**—A drafting instrument that protects the paper surface from damage when drawing multiple concentric circles with a compass.
- CENTER OF INTEREST**—The part of the picture that attracts the most attention.
- CENTER LINE**—Lines that indicate the center consisting of alternating long and short dashed evenly spaced.
- CENTER SPREAD**—Two facing pages formed by one folded sheet of paper.
- CENTRAL PROCESSING UNIT**—*Also called* CPU. The integrated circuit (IC) chip that controls the speed and processing power of the computer.
- CHAIN or CIVIL ENGINEER'S SCALE**—A scale, generally triangular, divided in decimal units or units of 10.
- CHARACTER**—Any letter, number, punctuation mark, or space in printed matter.
-

Continued on next page

Glossary, Continued

- C (Continued)** **CHARACTER GENERATOR**—A computer hardware or software device that provides a means for formulating a character font and as a controlling function during printing.
- CHARCOAL**—Specially charred willow sticks used for drawing on a paper with tooth.
- CHARCOAL DRAWING**—A drawing made with charcoal.
- CHARCOAL PENCILS**—Charred willow sticks encased in wood for strength.
- CHIAROSCURO**—Rendering forms using a balanced contrast between pronounced light and dark elements.
- CHINESE WHITE**—An opaque white watercolor pigment.
- CHISEL POINT**—Drawing or lettering with a wide, flat point.
- CHOKES**—Used to trap a dark element over a light background to avoid or minimize white space showing around the element during press plates misalignment.
- CHROMA**—*See* INTENSITY.
- CIRCULAR SCREEN**—A photographic screen used with a process camera, which allows screen adjustment to eliminate the wavelike or checkered effect, called moire.
- CIRCUMFERENCE**—The length of a line that forms a circle.
- CIRCUMSCRIBED**—To draw around or enclose within one geometric form another form or object.
- CLICK ON**—To select a computer function by clicking the buttons on a mouse.
-

Continued on next page

Glossary, Continued

C (Continued)

CLIP ART—A collection of artwork filed away for future use.

CMYK—An acronym for cyan, magenta, yellow, and black, a color specification system for color separation and printing.

COATED PAPER—Paper coated with a finely ground filler or clay to produce a smooth surface.

COBALT DRIER—A liquid agent used in a medium to accelerate the drying of oil paints.

COLD COMPOSITION—Composition of type that uses no molten metal to form the image.

COLD MOUNT—A method of mounting artwork or photographs to a surface.

COLD PRESSED—A paper or illustration board with a medium to rough surface texture.

COLLAGE—Artwork made by arranging and pasting pieces of cloth, newspaper, and various other materials on a surface to form a composition.

COLLATING—Gathering single sheets or leaves in sequence.

COLLOTYPE—A method of reproducing paintings and drawings using a gelatin plate.

COLOR—A sensation caused by light waves of different lengths comprised of three elements: hue, value, and intensity.

COLOR BARS—Bars of color that appear on a video screen to facilitate fine tuning of the color resolution.

COLOR BLENDING—Blending or combining different colors to form another color or smooth gradient.

Continued on next page

Glossary, Continued

C (Continued)

COLOR CHART—An arrangement of colors.

COLOR CYCLING—A spectral effect that creates the illusion of movement on the computer screen.

COLOR DIMENSIONS—The three elements of color: hue, value, and intensity.

COLOR GRAPHICS ADAPTER BOARD—*Also called CGA or a Video Graphics Adapter (VGA).* This IC chip defines the ability of the computer to execute commands during the creation of artwork in the computer.

COLOR HARMONY—A unified or aesthetically pleasing effect produced by a combination of colors.

COLOR INTERVAL—The degree of visual difference between two colors as measured by hue, value, and intensity.

COLOR KEY—The overall effect of the selected palette; for instance, a high—key illustration of light, bright or vibrant color and a low—key illustration of dull or monotonous colors.

COLOR NOTATION—The specification of color by written symbols and numerals based on an established color system used on sketches for future reference.

COLOR PROOF—An engraver's or printer's proof showing the effect of final color in perfect registration.

COLOR SCALE—A series of colors that display a change or gradation in hue, value, and intensity.

COLOR SCHEME—A group of colors that dominate a picture or create a unity within it.

Continued on next page

Glossary, Continued

C (Continued)

COLOR SEPARATION—(1) The photographic process of separating full-color originals into the primary printing colors; (2) An artist manually separating the originals for full color reproduction in the creation stage of a master artwork.

COLOR SKETCH—A rough drawing or layout approximating the color in the final picture.

COLOR SYMBOLISM—The use of color to signify or suggest an emotion, idea, or characteristic.

COLOR WHEEL—A circular color chart with colors arranged according to their positions as a primary, secondary, or tertiary color.

COLUMN—(1) A section of text or other matter that makes up a vertically divided page; (2) A vertical section of a table.

COMBINATION PLATE—A press plate that combines both halftones and line work.

COMIC STRIP—A series of drawings, in panel format, portraying the adventures of characters, humorous or otherwise, usually published in newspapers.

COMMERCIAL ART—Artwork of any kind prepared for commercial advertising and general promotion.

COMPACT DISK—*Also called* CD. A small disk of electronic files encased in a plastic casing.

COMPASS—An instrument for drawing circles and arcs.

COMPUTER DISPLAY MONITOR—An output device that allows the computer operator to see an image of electronic media on a cathode-ray screen similar to a television monitor.

Continued on next page

Glossary, Continued

C (Continued)

COMPUTER PLATFORM—The use of a particular brand of computer to develop software programs specifically for that brand.

COMPLEMENTARY COLORS—Any two opposing hues on a color wheel.

COMPOSITE—Comprised of two or more parts.

COMPOSITION—The arrangement of forms, colors, lines, and other pictorial units.

COMPOSITOR—A machine that converts electronic data into an acceptable format for a printer.

COMPREHENSIVE—A layout of art or type, either in black—and-white or color.

COMPREHENSIVE SKETCH—A finished layout that defines all of the elements, such as type, illustration, and spacing.

COMPRESSED FILES—Compacting computer—generated files to save disk and memory space or to facilitate faxing.

COMPUTER GRAPHICS—Artwork created by the use of a computer.

CONSTRUCTION—The drawing of objects so that they appear solid or three dimensional.

CONSTRUCTION LINES—Lightly drawn lines used in the preliminary layout of a drawing.

CONTACT SCREEN—A screen placed in direct contact with the film or plate to obtain a halftone pattern from a continuous—tone original.

CONTINUOUS-TONE ART—Artwork created using any medium that does not use a halftone process to represent tone.

Continued on next page

Glossary, Continued

- C (Continued)**
- CONTOUR PEN**—Adjustable pen nibs on a rotatable shaft used for drawing curvilinear lines.
- CONTRAST**—The range of tonal differences.
- COOL COLOR**—Colors that appear to project cooler temperatures.
- COOLED COLOR**—A color resulting from the addition of a cool color to a warmer color.
- COPY**—Any matter, including photographs, rules, designs, and text, used for producing printed matter.
- COPYBOARD**—A table or frame that holds original copy during a photographic exposure.
- COPYFIT**—Scaling copy to fit into an allotted space.
- COPYRIGHT**—Exclusive protection of ownership given to a creator of an original work.
- COQUILLE BOARD**—A drawing board that comes in a variety of roughened surfaces that break up crayon or brush strokes into texture more suitable for line reproduction.
- COURSEWARE**—All materials pertaining to a software program or course of instruction.
- CPU**—See CENTRAL PROCESSING UNIT.
- CRAWL DEVICE**—A rotating drum used to display credit lines for television transmissions.
- CREMNITZ**—See WHITE LEAD.
- CROP**—To cut off.
-

Continued on next page

Glossary, Continued

C (Continued)

CROP MARKS—Marks used to define the limits of an image for reproduction.

CROPPING—Defining the limits of an image for reproduction.

CROSSHATCH—Parallel lines drawn across other parallel lines to indicate tone.

CROW QUILL—A fine, stiff pen nib with little spring used for drawing fine lines and lettering.

CRT—*Also called* CATHODE-RAY TUBE. A screen or monitor that converts light rays to electrical impulses for transmission or receiving.

CURE—A solid form of six equal square sides.

CURSOR—A position indicator on a computer monitor.

CUTAWAY DRAWING—A drawing where a portion of the object is cut away revealing the internal structure.

CUTLINE—The placing of a caption in an illustration.

CUTTING PLANE LINE—A sectional view showing a theoretical cut on the item.

CYAN—Light blue-green color.

CYCLE OF ACTION—The completion of a single action of animated movement.

D

DAISY WHEEL PRINTER—A spinning wheel with spokes having raised letters and numbers.

DAMAR FINISH—Varnish used as a final protective coat over a painting or mixed as part of the painting medium.

Continued on next page

Glossary, Continued

D (Continued)

DATA POINTS—Symbols used to plot information or events on a graph or chart.

DATUM LINE—A line that indicates the position of a datum plane.

DEADLINE—Final delivery date.

DEBUGGING—Locating and eliminating software deficiencies.

DECAL—*See* DECALCOMANIA.

DECALCOMANIA—An image printed on specially prepared paper or film for transfer to another surface.

DECKLE EDGE—The rough or uneven edge of paper intentionally produced during manufacturing.

DELINEATE—To give depth to line art by making particular lines heavier.

DENSITY RANGE—*Also called* DENSITY SCALE. Measured differences between the minimum and maximum densities of a particular negative or positive.

DEPICT—To represent.

DEPTH—Thickness as measured downward from the surface of an object.

DEPTH OF FIELD—The distance between the closest sharply focused point to the farthest point in focus.

DESCENDERS—The parts of lowercase letters that fall below the main body base line, such as g, p, and q.

DESIGN—A planned or intended arrangement of the elements in a composition.

DESIGNER'S COLORS—Opaque watercolors of high quality.

Continued on next page

Glossary, Continued

- D (Continued)** **DESKTOP PUBLISHING**—The preparation of copy ready to go directly to press.
- DETAIL DRAWING**—A drawing that gives specific information.
- DETAIL PEN**—*Also called* SWEDE PEN. A broad nibbed, adjustable ruling pen with greater ink capacity than a standard ruling pen.
- DETAIL VIEW**—A view that shows part of the principal view of an item using the same plane and arrangement but in greater detail and in a larger scale.
- DEVELOPER**—A chemical that causes a reaction in an exposed emulsion to reveal an image in that emulsion.
- DIAZO FILM**—A flexible transparent base coated with an emulsion of diazo salts and couplers.
- DIAZO PAPER**—Paper treated with a diazo compound and azo dyestuff component.
- DIAZOCROME**—Diazo sensitized films that produce colored dye images on a transparent plastic base.
- DIFFUSED LIGHT**—Evenly spread light.
- DIMENSION LINE**—A thin, unbroken line with each end terminating in an arrowhead used to define the dimensions of an object.
- DIMETRIC PROJECTION**—An axonometric projection of an object where two axes make equal angles with the plane of projection and the third axis makes a smaller or larger angle with the plane of projection.
- DINGBATS**—Stars or ornaments used to embellish type.
- DISCHORD**—Color or elements that compete or are not in visual harmony and create uneasy or unattractive images.
-

Continued on next page

Glossary, Continued

- D (Continued)**
- DISK**—*Also called DISC.* (1) A flat photomatrix used in phototypesetting and computer equipment; (2) A layer of magnetic oxide used to store electronic data.
- DISK DRIVE**—A device that reads, adds, or deletes information stored on a disk.
- DISPLAY LETTERING**—Any large, prominent lettering used to attract attention.
- DISPLAYS**—A collection of objects and images arranged to tell a story.
- DISPLAY TYPE**—Large type used for headings and titles.
- DISSOLVE**—The fading of one scene as another replaces it.
- DISSOLVE UNIT**—An electronic device that automatically pulses a slide projector to dissolve an image and replace it with another.
- DISTORTION**—Changed or twisted out of natural shape.
- DIVIDERS**—An instrument used for dividing lines into equal segments and transferring measurements.
- DOMINANT**—Prominent or most important.
- DOT MATRIX PRINTER**—A printer that uses a number of pins to form letters and numbers.
- DOTS PER INCH**—*Also called DPI.* A standard measurement for resolution in the computer graphics industry.
- DOUBLE-ACTION AIRBRUSH**—An airbrush that requires the user to push down a button to expel air through the brush and to pull back the button to release paint.
-

Continued on next page

Glossary, Continued

- D (Continued)** **DRAFTING MACHINE**—A machine that combines the functions of a T-square or straightedge, a triangle, a ruler, and a protractor.
- DRAWING**—The representation of objects, ideas, or emotions on a flat surface using line, tone, or color.
- DRAWING THROUGH**—Sketching in the structural lines of an object as if it were transparent.
- DRIER**—A substance used to hasten the drying times of paint or ink.
- DROP CARDS**—Drop-out or drop-in title cards rigged to fall in and out of camera view.
- DROP OUT**—Masked or opaqued areas present in the halftone negative, print, or plate.
- DROP-OUT HALFTONE**—A halftone reproduction that eliminates the screen dots in white areas, often accomplished photographically by the platemaker or by re-etching.
- DRY BRUSH**—Drawing or painting with a brush that contains very little substance to create a textural effect.
- DRY MOUNT**—Mounting photographs without paste or rubber cement.
- DRY MOUNT PRESS**—An electrically heated press that activates an adhesive sheet or foil placed between the image and the illustration board.
- DUCK**—A lead weight used to position a spline while drawing irregular curves.
- DUMMY**—A rough draft or proposal of printed material pasted or bound together in exact reproduction size that show the areas illustration and text will occupy.
- DUOTONE**—Two-color halftone print made from a screened photograph.
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Continued on next page

Glossary, Continued

E

EARTH COLORS—Pigments made from earth minerals.

EDGE—The border or outline of a form or shape.

EDIT—To check, add, or delete.

EDIT CONTROLLER—A machine that locates the beginning and end of a scene used for cuing VCRs for presentation.

EGG-OIL TEMPERA—An opaque watercolor similar to egg-based tempura but with an added oil that makes the medium easier to handle and adaptable to a wider range of effects.

EGG TEMPURA—An opaque watercolor paint that uses egg yoke as a binder.

ELECTRONIC IMAGING—The creation, enhancement, and alteration of images through electronic or computer digitization.

ELEVATION—A four-view drawing of a structure showing front, sides, and rear.

ELITE—A type size for typewriters approximating 10 point printing type having 12 characters to the linear inch of copy and 6 lines to the vertical inch.

ELLIPSE—The enclosed plane forming a regular oval where the shortest dimension through the center is the minor axis and the longest dimension is the major axis.

EM—A measure of type equal to the square of the type body, derived from early type practices in which the letter *M* was cast on a square body.

EMPHASIS—Stress or accent on any part of a design or picture.

EMULSION—A suspension of fine drops or globules of one liquid in another liquid.

Continued on next page

Glossary, Continued

- E (Continued)** **EN**—A measure of type equal to one half of an EM.
- ENCRUSTING**—Taking a video image and wrapping it around an image of an object.
- ENGINEERING DRAWING**—An orthographic drawing of a piece of equipment or of its detailed parts containing information and instructions sufficient for manufacture.
- ENGINEER'S SCALE**—A scale used whenever dimensions are in feet and decimal parts of a foot, or when a scale ratio is a multiple of 10.
- ERASING SHIELD**—A small, thin spring metal plate with variously sized and shaped openings used to protect the surrounding area of a drawing while erasing in an adjacent area.
- ESSENTIAL AREA**—The part of a picture that contains all of the title or lettering intended for viewer consumption and often corresponding with the safe title area.
- EQUILATERAL**—Equal angles and equal sides.
- EXPLODED VIEW**—A pictorial view of a device in a state of disassembly, showing the appearance and interrelationship of parts.
- EXPOSURE INDEX**—The degree of light sensitivity of film.
- EXPORT**—The transfer of files to another software application.
- EXTENSION BAR**—A leg extension to a standard compass, which expands the diameter of a circle that the compass is able to draw.
- EXTENSION LINE**—A line used to indicate the extent of a dimension.
- EYE LEVEL**—*Also called HORIZON LINE.* The horizontal plane at the artist's eye level to which that person relates linear perspective.
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Continued on next page

Glossary, Continued

F

FACE—*Also called TYPEFACE.* A style of type.

FADE-IN—To bring an image from a pale version into full contrast gradually.

FADE-OUT—To bring an image from a full contrast of darks and lights to a pale version gradually.

FEATHER—A bleeding effect where small featherlike indications surround the characters.

FEATURE—A cartoon panel or strip appearing regularly in a publication.

FELT NIB PEN—A drawing pen with a felt nib or tip that ink soaks through from a reservoir.

FERRULE—The part of a brush that holds the hairs or bristles.

FIGURE—A line illustration or photograph of any kind used in a publication.

FILLS—Color, shades, or patterns added to computer-generated imagery.

FILM NEGATIVE—A photolithographic negative produced by a process camera.

FILM POSITIVE—A film- or acetate-based material having a black area or image and a translucent or clear background.

FILM SPEED—The degree of light sensitivity of film.

FINE ART—The personal expression of the artist who creates it.

FINISHED ART—Any piece of artwork complete or ready for reproduction.

FINISH MARKS—Marks used to indicate the degree of smoothness of the finish on machined surfaces.

Continued on next page

Glossary, Continued

- F (Continued)** **FIRST GENERATION**—Photographically reproduced copy made from the original.
- FIX**—To spray with a clear coat to protect or preserve an image surface.
- FIXATIVE**—Any clear solution sprayed or coated on a surface to stabilize, protect, or preserve an image.
- FIXER**—A solution or chemical that stabilizes the development of photosensitized films.
- FLEXIBLE CURVE RULE**—A scale or rule that bends in shape to irregular curved surfaces.
- FLAKE WHITE**—*See* WHITE LEAD.
- FLANNEL BOARD**—*Also called* FELTBOARD. A presentation board covered in felt or flannel that cut out shapes backed with a slightly abrasive backing will cling to.
- FLAPPING**—*See* MOUNTING AND FLAPPING.
- FLAT BRUSH**—A flat oil painting brush that is thicker and with longer bristles than the bright brush.
- FLAT COLOR**—Color that is dull or grayed or has a matte surface.
- FLAT TONE**—An area of uniform or even color.
- FLIP CARD**—One of a series of photographs or drawings shown in sequence to tell a story or deliver a message.
- FLOP**—To reverse from right to left or vice versa.
- FLOPPY DISK**—A disk of magnetic oxide that stores electronic data for retrieval by a computer disk drive.
-

Continued on next page

Glossary, Continued

F (Continued)

FLOW CHART—A chart that shows the flow of data through a data processing system and the sequence of their performance.

FLOUROGRAPHIC —*See* DROP-OUT HALFTONE.

FLUSH—Even with the margin or the widest line in a column or page.

FOCAL POINT—Center of interest.

FOCAL LENGTH—The distance from the center of the lens to the film plane.

FOCI METHOD—A method of drawing ellipses by plotting a series of points as their circumference using two points on the major axis (foci) as reference and connecting these points with french curves.

FOCUS—Image sharpness.

FOLIO—A sheet of paper folded once giving four pages.

FONT—Typeface designs and sizes.

FORESHORTEN—To depict an object or line in less than its true length.

FORM—The shape and structure of an object or figure.

FORMAL BALANCE—*See* BALANCE or SYMMETRY.

FORMAT—A general structure or composition.

F/STOP—Settings on the lens diaphragm of a camera lens that measure the amount of light allowed to reach the film.

F/16 RULE—Setting the camera for an f/stop of f/16 and the shutter speed close to the ASA/ISO rating of the film.

FRAME—A single unit in a storyboard, a cartoon feature, or a film strip.

Continued on next page

Glossary, Continued

- F (Continued)**
- FRAME GRABBER**—*Also called VIDEO CAPTURE.* A device that isolates one frame of a video image and inputs this frame into a computer.
- FREEHAND DRAWING**—Drawing without the use of mechanical aids.
- FRENCH CURVES**—Instruments used to draw smooth, irregular curves.
- FRESCO**—Painting on freshly spread, moist plaster with pigments.
- FRESNEL LENS**—A intense prismatic lens of concentric divisions, which concentrate and focus light through a transparent image onto a mirror and to a screen in an overhead projector.
- FRISKET**—A covering placed over part of a drawing or photograph to protect that section while working on the rest of the artwork.
- FRONTISPIECE**—An illustration preceding and usually facing the title page of a book.
- FULL-COLOR PAINTING**—A painting in which the three primary colors or some variation of them is evident.
- FULL MEASURE**—The entire width of a line of type flush with both margins measured in picas.
- FULL SECTION**—A sectional view that passes entirely through the object.
- FULLERS EARTH**—A fine white powder used for preparing the surface of a photograph to accept retouching.
-
- G**
- GALLEY PROOF**—A rough proof of type made for proofreading, submitted before pages are made up.
- GANG RUN**—Several different jobs printed simultaneously on a large press in the same colors on one sheet to save time and reduce costs.
-

Continued on next page

Glossary, Continued

- G (Continued)** **GANG SHOOTING**—Photographing several pages of original copy at the same time.
- GELATIN**—A pure glue made from animal or vegetable matter.
- GENERATION**—A single step in a reproduction process.
- GIGABYTE**—Approximately one billion bytes of information, a kilobyte to the third power (1,024 x 1,024 x 1,024).
- GLAZE**—An application of a transparent color or value over another color or value.
- GLOSSY PRINT**—A print having a shiny finish, which does not readily absorb inks or paints.
- GLYCERIN**—A heavy oil, colorless and odorless, used in the preparation of watercolor pigment.
- GOLDENROD**—Paper or plastic mask material used to support negatives in making press plates.
- GOTHIC**—An alphabet or typeface characterized by strokes of equal or almost equal thickness, usually without serifs.
- GOUACHE**—An opaque watercolor.
- GRADED WASH**—A wash that blends a light tone to a dark tone or vice versa.
- GRADUATED FILL**—To fill with color, shade, or pattern that variegates from dark to light or vice versa.
- GRAPHIC ARTS**—A form of art specializing in work prepared primarily for conveying information.
-

Continued on next page

Glossary, Continued

- G (Continued)**
- GRAPHIC INTERFACE**—Screen graphics on the computer screen that make the computer easier to use.
- GRAPHICS PRINTER**—A high-resolution printer capable of printing graphic images.
- GRAPHICS TABLET**—An electronic input device that allows the user to draw on the tablet before committing the image to memory.
- GRAPHITE**—The black marking substance in a lead pencil.
- GRAVER**—A needle or square pointed tool used to scratch lines into scratchboard.
- GRAVURE**—A photomechanical printing process (intaglio) with the images recessed below the surface of the plate.
- GRAY**—A color formed by mixing black and white or complementary colors.
- GRISAILLE**—A decorative gray monochromatic painting designed to create the illusion of a bias—relief sculpture.
- GUM ARABIC**—A water soluble gum used as a binder in some watercolors and tempura paints.
- GUTTER**—(1) The inner margin of a printed page extending from the printed portion to the fold or binding; (2) The area between two columns on a printed page.

H

- HALF SECTION**—A combination of an orthographic projection and a section view to show two halves of a symmetrical object.
- HALFTONE**—A tonal pattern of shades from white through black defined by a series of dots.

Continued on next page

Glossary, Continued

- H (Continued)** **HALFTONE SCREEN**—A screen placed in front of the negative material in a process camera to break up a continuous-tone image into a dot formation.
- HARD COPY**—Copy of any kind produced on paper or any substrate except film, used for proofing, checking, revising, or redrawing.
- HARMONY**—A pleasing arrangement of the picture elements, because of the similarity of one or more qualities.
- HEXAGON**—A six-sided figure.
- HIDDEN LINE**—Thick, short dashed lines used to show a hidden part or edge.
- HIGHLIGHT HALFTONE.**—*See* DROP-OUT HALFTONE.
- HIGH SURFACE**—*See* HOT PRESSED.
- HINGE JOINT**—A joint limited to back-and-forth movement.
- HOLDING LINE**—A line usually drawn in black on a mechanical intended for reproduction.
- HOOK AND LOOP BOARD**—A briefing board covered with nylon hook material to which items backed with a nylon loop material will stick.
- HORIZON LINE**—An imaginary horizontal line representing the observer's line of sight.
- HOT PRESSED**—*Also called* HIGH SURFACE. A smooth art paper or illustration board.
- HUE**—The name given to distinguish any color.
- HYPO**—*See* SODIUM THIOSULFATE.
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Continued on next page

Glossary, Continued

I

ICON—Onscreen computer symbols that portray functions by graphic images.

ILLUMINATION—The hand decoration of text in a book, a manuscript, or a diploma.

ILLUSTRATION—A picture designed to interpret a story or an article.

ILLUSTRATION BOARD—Heavy paper board manufactured especially for artists available in a variety of sizes, surfaces, and weights.

IMAGE AREA—An area that encompasses a printed, drawn, or photographed image and the light or dark background space around the image.

IMPORT—The transfer of files from other software applications.

INDEFINITE BLENDING—Adding paint or ink to a wet surface to promote indefinite effects.

INDIA INK—Pigment made of lampblack and a binder suspended in water as a fluid ink.

INFINITY—The farthest distance marking on a lens.

INFORMAL BALANCE—*See* BALANCE.

INK JET PRINTER—A high-resolution printer that uses a minute jet spray of ink to create an image.

INPUT—Text or parameters entered into a computer memory or saved on disk.

INPUT DEVICE—*See* KEYBOARD or JOYSTICK. An accessory used to provide text or commands into a computer or disk.

INSCRIBED—An object completely enclosed by another.

Continued on next page

Glossary, Continued

I (Continued)

INTAGLIO—Printmaking from engraved or etched lines and surfaces.

INTENSITY—The degree of strength, saturation, or purity of a color.

INTERFACE—Interaction between accessories.

INTERMEDIATE—A copy of an original on translucent or transparentized film, paper, or cloth, which now becomes a master to make other copies.

IRREGULAR CURVES—Curvilinear forms that do not contain arcs easily replicated by a compass or circle template.

ISOMETRIC PROJECTION—A set of three or more views of an object that appears rotated, giving the appearance of viewing the object from one corner.

ITALICS—Letters whose form has an oblique slant to the right or left.

IVORY BLACK—A fine black pigment.

J

JOYSTICK—*See* TRACKBALL or MOUSE. A computer input device used for remote manipulation of a cursor.

JUSTIFICATION—Spacing within the line of type of a predetermined measure to align the margins.

JUXTAPOSITION—Side-by-side placement for a desired effect.

K

KERN—Part of a letter that appears as a hairline connection between adjacent letters.

KERNING—The addition of space between characters.

KEY—A scale of values, tones, or hues.

KEY ART—*See* BLACK ART.

Continued on next page

Glossary, Continued

K (Continued)	<p>KEY LINE—A line drawn in red on a mechanical to indicate position and size of a piece of copy that will not be visible in the reproduction.</p> <p>KEYBOARD—A computer input device based on the principle of a typewriter keyboard used to input text and commands into a computer.</p> <p>KEystone EFFECT—Onscreen distortion created when the projector is not parallel to the deck or screen surface.</p> <p>KID FINISH—A medium-textured surface of art paper or illustration board.</p> <p>KILOBYTE—Abbreviated as K, a kilobyte is 1,024 bytes of data.</p>
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	<p>LAMINATE—(1) A transparent plastic or acrylic cover material; (2) To cover a surface with a transparent plastic or acrylic material.</p> <p>LAMINATION—A plastic or acrylic used to cover a surface.</p> <p>LAMPBLACK—A very fine black pigment used in various black paints and inks.</p> <p>LASER—An acronym for Light Amplification by Stimulated Emission of Radiation.</p> <p>LASER PRINTER—A high-resolution printer that uses laser technology to create an image.</p> <p>LAYING IN—The initial broad application of tone to a picture.</p> <p>LAYOUT—The arrangement of a book, a magazine, or other publication so that text and illustrations follow a desired format.</p> <p>LEADING—Spacing between lines of type, measured in points.</p> <p>LEADER LINE—Thin, unbroken lines used to connect numbers, references, or notes to appropriate surfaces.</p>
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Glossary, Continued

L (Continued)

LEAF—A single sheet that includes both sides.

LEAK—An accidental escape of fill color or texture from an object or shape not completely enclosed by pixels.

LENS—Optical glass components arranged in a formation that creates a focal point at a specific distance from a screen.

LENS DIAPHRAGM—Controls the amount of light allowed to reach the film.

LEGEND—A description of any special or unusual marks, symbols, or line connections.

LENTICULAR SCREEN—A projection screen with a surface patterned to reflect a projected image with minimum glare.

LETTERHEAD—(1) The printed matter, usually the name and address of a company, at the head of a sheet of letter-quality paper; (2) A sheet of paper bearing a letterhead.

LETTERING—Letters and words formed or printed by hand.

LETTERPRESS PRINTING—A printing process in which the raised, inked surfaces of the type and/or plates transfer an impression directly to the paper.

LETTER-QUALITY PRINTER—A printer that imitates letters with resolution similar to a typewriter.

LETTERSPACING—Placing additional space between the letters of words to expand the length of a line or to improve and balance typography.

LIFT METHOD—(1) The process of using laminate material to remove or lift an image from clay-coated stock; (2) scanning text or graphics onto disk for importation to another application.

Continued on next page

Glossary, Continued

- L (Continued)** **LIGHT BOX**—A box with a translucent glass or plexiglass top illuminated from underneath, used for tracing and layout.
- LIGHTFACE**—The lightest and thinnest form of a type series.
- LIGHT PEN**—An electronic input device used to draw freehand against a CRT screen.
- LIMITED PALETTE**—(1) A palette with a restricted number of pigments; (2) A palette that lacks one or more of the three primary colors.
- LINE**—A continuous, unbroken mark made by a pen, a pencil, a brush, or other drawing instrument.
- LINE AND WASH**—A technique combining a black line with transparent wash.
- LINE COPY**—A composition of black lines and masses without gradation of tone.
- LINE DRAWING**—A drawing composed entirely of lines, dots, and areas of solid black.
- LINE OF DIRECTION**—The line the eye follows when looking at the picture.
- LINES PER INCH**—*Also called LPI.* A standard measurement of resolution for the color printing trade.
- LINE WEIGHT**—The thickness of pencil, ink, or other lines in artwork.
- LINSEED OIL**—An oil obtained by pressing the seeds of a plant, which produces linen fiber used as a medium in oil painting.
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Continued on next page

Glossary, Continued

L (Continued) **LITHOGRAPHY**—*See* OFFSET PRINTING or OFFSET LITHOGRAPHY. A reproduction process in which grease crayon lines and masses drawn on a flat, polished stone print through the affinity of grease to grease (grease crayon and printer's ink). The wetted stone repels the ink from the other areas not covered with crayon.

LITHOGRAPHIC PENCILS—An oily pencil or crayon used to mark lithographic plates.

LOCAL COLOR—The actual color of an object without regard to the effect of changing light and shadow conditions.

LOCAL COLOR VALUE—The actual lightness or darkness of a color without regard to the effect of changing light and shadow conditions.

LOGOTYPE—*Also called* LOGO. The lettered signature, nameplate, or trademark of a commercial firm.

LONGSHOT—A picture showing a full figure or a distant view.

LACEY LUCY—*See* CAMERA LUCIDA.

M **MACHINE COMPOSITION**—Type set by a machine.

MACRO LENS—A short focal-length lens specifically designed to allow closeup photography.

MAHLSTICK—A rod used in the palette hand to support or steady the painting hand.

MAKEUP—*See* LAYOUT. The arrangement of text and illustrations on a page in conformance to standard practices in the industry or to publication requirements.

MAGNETIC CHALKBOARD—A briefing board that accepts chalk markings and magnetic attachments.

Continued on next page

Glossary, Continued

M (Continued) **MARS COLORS**—Artificial earth colors.

MASKING—To block out a portion of an illustration by pasting paper over it to prevent it from reproducing.

MASKING TAPE—An opaque, paper tape used to cover the edges of a picture while painting and to fasten artwork temporarily to a drawing board.

MASTER—An original typed, drawn, or typeset copy intended for reproduction.

MAT—A cardboard or paper decorative enclosure around a picture.

MATCH DISSOLVE—Holding one element on a screen as one scene dissolves into another.

MATTE—Dull or without shine.

MATTE PRINT—A print having a dull finish.

MATTE SCREEN—A projection screen with a dull surface to reduce glare from overhead lights.

MEASURE—The length of a line of type measured in picas.

MEATBALL—*See* **BULLET**.

MEDIA INTEGRATION—*Also called* **MULTIMEDIA**. Mixing various presentation devices in the same presentation.

MECHANICAL—A page or layout prepared as an original for photomechanical reproduction.

MECHANICAL DRAWING—A method of drawing using precision tools to produce mathematically precise layouts, diagrams, and engineering drawings.

Continued on next page

Glossary, Continued

- M (Continued)** **MEDIUM**—(1) A liquid that dilutes a paint without damaging its adhesive; (2) The mode of expression employed; (3) The actual instrument or material used by the artist.
- MEGABYTE**—Abbreviated MB or M, approximately one million bytes of data.
- MEMORY**—That portion of computer hardware that retains data for later retrieval.
- MENU**—A selection of options displayed on a computer screen.
- MICROCOMPUTER**—Another name for a personal computer or computer workstation not attached to a mainframe system.
- MILITARY STANDARDS**—*Also called MIL—STD.* A formalized set of government standards.
- MIXED MEDIUM**—*Also called MIXED MEDIA.* A combination of two or more mediums.
- MODEM**—An electronic input/output device that connects computer workstations for communications. An acronym for the word modulator and demodulator.
- MOIRÉ**—An wavy or checkered pattern that results when photographing a halftone through a screen.
- MONOCHROMATIC**—Shades or tints of one color.
- MONTAGE**—*See COMPOSITE.* (1) Arranging a number of pictures or designs in a combination, often with some overlapping, so that they form a composite whole; (2) The resultant arrangement or composition.
- MONITOR**—The viewing screen of a computer system.
- MOOD**—An outward projection of a feeling or emotion that affects behavior communicated by action, situations, or symbology in a picture.
-

Continued on next page

Glossary, Continued

M (Continued)	MORGUE — <i>See</i> PICTURE MORGUE, CLIP ART, or RESEARCH FILE.
	MOUNT —To fasten onto another surface.
	MOUNTING AND FLAPPING —Fastening original artwork or copy to a board allowing sufficient excess around the picture borders to accommodate attaching a protective overlay along one side.
	MOUNTING BOARD —Heavy paper boards used as backboards to support drawings, paintings, and photographs.
	MOUSE —A hand-held computer input device that allows rapid movement and selection.
	MULTIMEDIA — <i>Also called</i> MEDIA INTEGRATION. A combination of presentation devices used in the same presentation.
	MULTIPURPOSE BOARD —A briefing board with a slick, bright, white surface that accepts erasable marker, marker, and magnetic backed accessories.
	MUNSELL COLOR SYSTEM —A system of color analysis and identification that distinguishes between the three measurable dimensions of hue, value, and chroma (intensity).
	MURAL —Any picture painted or fixed permanently on a wall or ceiling.
	MYLAR —Tough, highly stable, polyester film used as a base for engineering drawings, laminating, overlays, and a wide variety of other applications.
N	NARRATION — <i>Also called</i> VOICE OVER. The description or commentary that accompanies television and video presentations.
	NCR PAPER —No Carbon Required paper; chemically coated paper that transfers a copy of an image to the sheet directly behind it without the use of a carbon.

Continued on next page

Glossary, Continued

N (Continued)

NEGATIVE, PHOTOLITHOGRAPHIC—A film negative having a translucent image and a black background produced by a process camera and used primarily to make printing plates..

NEUTRAL COLOR—(1) A color that lacks hue and intensity; (2) A color that contains some amount of its complementary; (3) An earth color.

NIB—A point at the end of a pen or marker.

NOISE—Adding a random pattern of pixels over an image to add texture, create a new value, or give a painterly effect.

NORMAL LENS—*Also called* STANDARD LENS. A 50mm focal—length lens, which most closely approximates normal vision with minimal distortion.

O

OBLIQUE PROJECTION—A view produced when the projectors are at an angle to the plane of the object illustrated.

OCTAGON—A figure having eight sides.

OFFSET LITHOGRAPHY—*See* LITHOGRAPHY. Lithographic printing where an inked plate prints on a rubber blanket, which then offsets the image to paper stock.

OFFSET SECTION—A section view of two or more planes in an object to show features that do not lie in the same plane.

OIL PAINT—Any pigment ground in linseed oil or poppy oil.

OILSTONE—A stone or abrasive used to sharpen needlepoints and blades.

ONE POINT PERSPECTIVE—*Also called* PARALLEL PERSPECTIVE. When the height and width of an object are parallel to the plane of projection.

ONION SKIN—*Also called* MANIFOLD PAPER. Thin, translucent paper used to make a typewriter carbon copy or to serve as a tissue overlay for work requiring correction or protection.

Continued on next page

Glossary, Continued

- O (Continued)** **ONSCREEN**—An image that appears on the computer or television screen.
- OPAQUE**—(1) Impermeable to light; not transparent or translucent; (2) To paint over unwanted portions of a negative with a solution to prevent light from seeping through.
- OPAQUE PROJECTOR**—A device that projects an opaque object to a desired size on another surface.
- OPAQUE WATERCOLOR**—*See* WATERCOLOR. A creamy, opaque paint—like gouache or tempura, available in tubes, jars, or by mixing white with transparent colors.
- OPAQUING**—Covering up with opaque paint.
- OPTICAL CENTER**—A point slightly above (10%) the geometric center of a layout that the eye perceives as the center.
- OPTICAL ILLUSION**—An unreal or misleading image perceived by the eye as real.
- OPTICAL SPACING**—The arrangement of spacing between letters for legibility and appearance, which varies with the shape of the letters to achieve optical equalization.
- ORGANIZATION CHART**—A block chart or diagram showing the names, titles, departments, and responsibilities of personnel in an organization.
- ORIGINAL**—*See* MASTER. Copy submitted to the printer for reproduction.
- ORTHOGRAPHIC PROJECTION**—A method of projection with six principal views.
- OSCILLATING AIRBRUSH**—An airbrush with a reciprocating needle used for fine detailed work.
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Continued on next page

Glossary, Continued

O (Continued)

OUTPUT—The end product generated by an electronic device, such as a computer, printer, or copier.

OUTPUT DEVICE—An electronic accessory to a computer system that provides some type of end product either visually or as a hard copy.

OUTLINE—The outside edge of a shape or form.

OUTLINE DRAWING—A drawing where lines define the outer limits of the forms without the representation of modeling, light, or shadow.

OVERHEAD PROJECTION—A projector that uses of a system of mirrors and a fresnel lens to project a transparent image or object to another surface or screen.

OVERLAP—To cover a part of one shape or line with another.

OVERLAY—A transparent or translucent sheet taped over the original art for protection or to indicate instructions or corrections.

OVERPRINTING—Printing an image over another impression.

OZALID MACHINE—An ammonia process printmaking machine that produces the same-size copy from transparent or translucent originals.

P

PAINTING KNIFE—*See* PALETTE KNIFE. A type of palette knife made for applying paint to a picture.

PALETTE—(1) The surface on which the artist places paint and mixes colors before applying them to canvas or other painting surface; (2) A group of colors or gray values chosen for use in the same picture.

PALETTE KNIFE—A thin, flexible, steel blade set in a wooden or plastic handle available in a variety of shapes used for mixing paints and impasto, applying paint directly to a canvas or to create special textures directly on the surface of a picture.

Continued on next page

Glossary, Continued

- P (Continued)** **PALETTING**—Moving the pigment back and forth across a palette with a paint brush to achieve a certain consistency in texture or color or to load the brush with pigment adequately.
- PANEL**—(1) A given area in which a cartoon is drawn, with or without a defined frame; (2) One box or frame of a comic strip; (3) One unit of a storyboard.
- PANORAMA**—*Also called* PAN. Slow, steady camera movement from side to side.
- PANTOGRAPH**—A mechanical device based on the shape of a parallelogram, used to reduce, enlarge, or copy pictures.
- PANTONE COLOR SYSTEM**—An industry accepted system of color analysis and identification which distinguishes between the three measurable dimensions of hue, value, and chroma (intensity).
- PARABOLIC REFLECTORS**—Lamp reflectors that assist even illumination and shorten exposure time.
- PARALLAX**—Distortion present when exposing film through a lens not aligned with the viewfinder, distortion corrected by a rangefinder camera.
- PARALLEL PROJECTION**—*See* ONE POINT PERSPECTIVE.
- PARALLEL STRAIGHTEDGE**—A long, straight edge supported at both ends to maintain parallel motion.
- PARTIAL SECTION**—A sectional view consisting of less than a half section.
- PASTEL**—(1) A dry pigment mixed with a variety of binders to form a stick or crayon for application to a picture surface; (2) A picture executed in the pastel medium.
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Continued on next page

Glossary, Continued

- P (Continued)** **PASTE-UP**—The process of pasting an image or part of an image on a reproduction page or sheet before photographing for platemaking or printing.
- PATTERN**—(1) The regular or irregular distribution or arrangement of elements; (2) Regularly repeated flat designs used to create two—dimensional textures.
- PENS, PLOTTER**—A pen nib or jet spray attached to a plotter output device.
- PENS, STEEL BRUSH**—Steel pen nibs designed to create large poster size lettering.
- PENS, TECHNICAL**—Conical or tubular tipped pen nibs designed to produce a consistently even line of a predetermined weight in a standard or metric measurement available with and without a reservoir.
- PENTAGON**—A five-sided figure generally having equal sides and angles.
- PERCENTAGE CHART**—*Also called* **PIE CHART**. A circular chart divided into wedges whose sum equals 100% or 360°.
- PERPENDICULAR**—A vertical line meeting or intersecting a horizontal line at 90°.
- PERSONIFICATION**—Attributing human qualities to animals or inanimate objects.
- PERSPECTIVE**—The visual impression of lines moving closer together as distance increases.
- PHANTOM LINES**—*Also called* **ALTERNATE POSITION LINES**. Lines consisting of one long and two short dashes, evenly spaced, terminating in a long line, used to indicate an additional position of a part or object.
-

Continued on next page

Glossary, Continued

- P (Continued)** **PHANTOM VIEW**—A view showing an alternate position of a movable object.
- PHOTOGRAPHIC TYPESETTERS**—*See* TYPESETTERS, PHOTOGRAPHIC.
- PHOTOLETTERING**—A method of simulating hand lettering or display type by photographic means.
- PHOTOLITHOGRAPHY**—The transferring of a drawing to a lithographic plate by photography.
- PHOTOMECHANICAL**—Pertaining to any process of printing or duplicating images by mechanical means from a photographically prepared printing plate.
- PHOTOSTAT**—*Also called* STAT. A photographic image recorded by a camera so constructed that it photographs and develops directly on paper, in negative values.
- PHOTOTYPE**—Type set by photographic means.
- PICA**—A unit of measure equal to 12 points or 1/6 of an inch.
- PICKUP**—A square of gum rubber used to remove excess rubber cement.
- PICTORIAL DRAWING**—Any drawing that depicts an object with recognizable clarity.
- PICTURE AREA**—The flat surface within the borders of a picture.
- PICTURE MORGUE**—*Also called* MORGUE. *See* CLIP ART.
- PICTURE PLANE**—An imaginary plane placed between the observer and the object, usually at right angles to an observer's line of vision.
- PIE CHART**—*See* PERCENTAGE CHART.
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Continued on next page

Glossary, Continued

P (Continued)

PIGMENT—Dry color matter that becomes paint when mixed with a vehicle or binder.

PINHOLE—A small light spot that appears on a developed photographic negative resulting from particles of dust and lint on the unexposed negative, the camera lens, the vacuum board glass, or other parts of the camera.

PIN REGISTER—A method of holding elements in place in overlay work and animation.

PIXEL—*Also called* PICTURE ELEMENT. A small bit of digital data from a computer screen.

PIXEL MAP—*Also called* BIT MAP. A matrix of pixels that form a digital image on the computer screen.

PIXILATED—Having jagged edges.

PIXEL—Specifying the size of a pixel on the computer screen.

PLAIN TITLE CARD—Printed information only on a card for television transmission of credit lines.

PLAN VIEW—A view of an object or area as it would appear if viewed from directly above.

PLANE—A flat surface.

PLANNING CARDS—A small card containing a idea or point placed in sequence on a storyboard.

PLAT—A map or plan view of a lot showing principal features, boundaries, and location of structures.

PLATE FINISH—A smooth surfaced paper.

PLY—A single layer of drawing paper.

Continued on next page

Glossary, Continued

- P (Continued)** **POINT**—A standard type measure of 1/72 of an inch or 72 points equals 6 picas.
- POLYMER**—Paints that have polyvinyl acetate or acrylic resin as a binder used as either a transparent or opaque medium.
- POLYGON**—Common geometric constructions.
- PORTRAITURE**—The process or art of depicting an individual by drawing, painting, or photographing from life.
- PORTRAY**—To delineate or depict.
- POSTER**—A large cardboard or paper display sign.
- POSTER BOARD**—A medium weight cardboard suitable for show cards.
- POSTER COLOR**—An opaque watercolor used for making show cards.
- POSTERIZATION**—A technique for adding poster—like qualities to a photograph, a film, or an illustration by separating the normal tones of a subject into distinctly separated, strong tones.
- POUNCE**—A powdered substance that improves the ink—absorbing qualities of tracing cloths and papers.
- PRELIMINARY DRAWINGS**—Drawings done in preparation for a finished piece of art.
- PRE-PRESS**—The preparatory stage of art or copy immediately before committing the image to a plate.
- PRIMARY COLORS**—The red, yellow, and blue in a subtractive process and the red, yellow, and green in the additive process of color theory.
- PRINT**—An image made from a master negative or plate.
-

Continued on next page

Glossary, Continued

P (Continued)

PRINTING—A process for reproducing copy.

PRINTING PLATE—*Also called CUT.* A flat piece of metal used on a printing press that contains the image either engraved or etched photographically on the surface.

PRISM—A transparent piece of crystal or optical glass having two plane surfaces which are not parallel that separate white light into the visible colors of the spectrum.

PROCESS COLOR REPRODUCTION—A combination of halftone plates, usually red, yellow, blue, and black, which when printed in perfect register, combine to produce a full—color reproduction.

PRODUCTION DEPARTMENT—The people responsible for purchasing and maintaining schedules on printing, typography, engravings, bindings, paper, and sometimes the purchase of art for an organization.

PROGRESSIVE PROOFS—Proofs showing the order of printing and shade of ink for each required plate.

PROGRESSIVE DISCLOSURE—Systematically revealing information on a partially obscured visual.

PROJECTION—The act or art of projecting lines-and planes in orthographic and perspective drawings.

PROJECTOR—A device containing a light and lenses for projecting an image onto another surface.

PROJECTURAL—(1) An image projected onto another surface; (2) The image so projected.

PROOF—A printed impression from a negative, a plate, or a body of type submitted for examination or correction.

Continued on next page

Glossary, Continued

P (Continued)	<p>PROOFREADER'S MARKS—Standard marks placed in the margin nearest the word that indicate corrections in typeset copy.</p> <p>PROPORTION—The relation to size of one part or thing to another or one portion of something to the whole.</p> <p>PROPORTIONAL DIVIDERS—A drafting instrument used for transferring measurements from one scale to another or to divide lines and circles into equal parts.</p> <p>PROPORTIONAL SPACING—<i>Also called</i> DIFFERENTIAL LETTERSPACING. The spacing of characters in proportion to size by means of the typewriters and office composing machines used in the preparation of cold composition copy.</p> <p>PROPS—Accents or accessories that identify the time frame or location of a subject.</p> <p>PROTRACTOR—A circular or semicircular rule for measuring off the degree of an angle.</p>
Q	<p>QUILL PEN—<i>See</i> CROW QUILL. A pen nib made from a feature quill.</p>
R	<p>RADIAL FILL—To fill an object with color, pattern, or shade that appears to radiate from the center of the object.</p> <p>RADIATION—A divergence of lines, tones, or colors from a common point to different directions.</p> <p>RADIUS—A straight line from the center of a circle or sphere to a point on its circumference.</p> <p>RADIUS CURVE—A drawing tool used to draw arcs of a predetermined radius.</p>

Continued on next page

Glossary, Continued

- R (Continued)** **RANDOM ACCESS MEMORY**—*Also called* RAM. Retrievable computer memory accessible at will without sequential reading.
- RANGEFINDER**—The ground glass in a camera used to focus an image.
- RASTER-BASED**—An image based on the manipulation of a matrix of pixels or dots.
- RASTER IMAGE PROCESSOR**—*Also called* RIP. A device for converting vector—based imagery to high—resolution raster images.
- READ**—To access electronically stored data.
- REAR PROJECTION SCREEN**—A matte surface, translucent screen used when projecting an image from behind to a screen.
- REBOOT**—Restart the computer system.
- RECEDING COLORS**—Colors that appear to move away or create the illusion of distance.
- RECTANGULAR COORDINATE GRAPH**—A graph based on a grid system where values are plotted by X and Y coordinates.
- REFERENCE NUMBERS**—Numbers used on one drawing to refer to another drawing for further details.
- REFERENCE PLANE**—The normal plane used to reference all information.
- REGISTER**—To align a page or any elements of an image or impression to match the position of successive impressions.
- REGISTER MARKS**—Marks used to key an overlay to a drawing or mechanical as in color separation or combination plates.
- REMOVED SECTION**—A drawing of the internal cross section of an object located near the basic drawing of the object.
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Continued on next page

Glossary, Continued

R (Continued)

RENDER—To represent, portray, or depict in a drawing or painting.

RENDERING—A drawing or painting in which tonal values vary from white through black or from light to dark shades.

REPRODUCIBILITY—The ability of line and halftone copy to reproduce as acceptable and legible.

REPRODUCIBLE ART—Second-generation art made from the original art and mortised or pasted onto the reproduction page.

REPRODUCTION—Making one or more copies of an original piece of work.

REPRODUCTION COPY—*Also called* CAMERA-READY COPY. Copy ready in all respects for photomechanical reproduction.

REPRODUCTION PROOFS—*Also called* REPROS. Exceptionally clean, sharp proofs on a highly coated paper used for reproduction.

REPROGRAPHICS—The reproduction of images by copying machines and their methods and processes.

RESCALE—To enlarge or reduce in size or to change in shape without changing proportion to fit new space configurations.

RESEARCH FILE—See MORGUE, PICTURE MORGUE, or CLIP ART.

RESOLUTION—Clarity, focus, or density.

RETOUCH—To delete unwanted image areas or make repairs to copy by painting out with an opaque solution.

RETOUCH GRAYS—A series of opaque watercolors ranging from white to black.

Continued on next page

Glossary, Continued

- R (Continued)** **RETOUCHING**—The alteration of detail or removal of spots and blemishes in a photographic print or negative.
- RETOUCH VARNISH**—A light, colorless varnish sprayed on a dull, dried-out area or an unfinished oil painting to restore the “wet” colors or values, making it easier to mate with new paint.
- REVERSE**—*See* FLOP. To turn over.
- REVERSAL**—*See* REVERSE PRINT.
- REVERSE PRINT**—A print where the black values of the originals are white.
- REVISION BLOCK**—Space located in the upper-right corner of a drawing to record any changes to the original drawing.
- REVOLVED SECTION**—A drawing of the internal cross section of an object superimposed on the basic drawing of the object.
- ROMAN**—One of a group of alphabets or typefaces characterized by thick and thin strokes and often with serifs.
- ROSS BOARD**—An illustration board that comes in a variety of roughened surfaces that divide crayon or brush strokes into broken textures suitable for reproduction.
- ROTATION**—A view in which the object is rotated or turned to reveal a different plane or aspect.
- ROUND BRUSH**—A cylindrical brush having an evenly tapered point.
- RUBBER CEMENT**—Semitransparent glue consisting of gum rubber and a petroleum or benzol solvent.
- RUB-ONS**—Transfer sheets containing reprinted characters, symbols, and numerals applied by burnishing over an acetate or paper back sheet.
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Continued on next page

Glossary, Continued

R (Continued)	RULING PEN —An instrument that holds ink between two adjustable blades.
	RUNNING HEAD —The title repeated at the top of consecutive pages in a book or magazine.

	SABLE BRUSH —A flat or round-shaped brush made from the tail hair of a Kolinsky (Asiatic) mink.
	SAFELIGHT —A colored light used to illuminate a darkroom without harming photosensitive film or paper.
	SANDPAPER PAD —A pad of sandpaper sheets mounted on a strip of wood used to sharpen a pencil lead or pastel.
	SANS SERIF —Without serifs, a letter that does not have a finishing stroke.
	SATURATION —The purity or intensity of color.
	SCALE —(1) Proportions or relative dimensions; (2) To enlarge or reduce without changing the original proportions.
	SCALE CLIP —A clip attached to a scale that focuses on the scale currently in use.
	SCALE DRAWING —A drawing that shows relative sizes and proportions.
	SCALING — <i>Also called</i> DIMENSIONING or SIZING. Enlarging or reducing copy or an image to the correct dimensions to occupy a given area.
	SCANNING AREA —The total area or picture that the camera sees.
	SCRAP FILE — <i>See</i> RESEARCH FILE.
	SCRATCHBOARD —A type of illustration board with a chalky surface uniformly covered with ink.

Continued on next page

Glossary, Continued

S (Continued)

SCREEN—A glass plate or film with crosshatched lines that photographically produces a halftone for reproduction from a continuous—tone original.

SCREEN PROCESS PRINTING—*Also called SILKSCREEN.* A form of stencil printing that uses silk, nylon, or metal screen to contain the image.

SCREEN REFRESH—A continuous update of computations that create the image on a computer screen.

SCRIPT—(1) Lettering based on hand writing; (2) A paper or papers that describe in detail all of the elements of a commercial or story.

SCROLL—A rapid up-or-down movement of a computer screen image during a search function.

SECONDARY COLORS—The colors (orange, green, and violet) that lie halfway between the three primary colors.

SECTION LINE—Thin, diagonal lines used to indicate the surface of an imaginary cut in an object.

SECTIONAL VIEW—The view obtained by cutting away part of an object in an illustration to show the shape and construction of the interior.

SEPIA—A dark, warm brown color of low brilliance.

SEPIA INTERMEDIATE—An intermediate used in making duplicate transparencies by the whiteprint process.

SERIF—The finishing stroke or line projecting from the end of the main stroke of many letters in some typefaces.

SET PALETTE—One hue mixed with a group of colors to create color harmony or unity in a chosen palette.

Continued on next page

Glossary, Continued

S (Continued)	SETTING —Background or surrounding.
	SHADE —A mixture of pure color and black.
	SHADING —Lines, values, or color applied to create form, shadow, or pattern.
	SHADING MEDIUMS —Preprinted tones and patterns used to enhance the appearance of copy and artwork.
	SHADING SHEETS —Sheets of cellophane or acetate preprinted with tones and patterns with a low-tack adhesive for applying to artwork.
	SHAPE —The flat silhouette or two-dimensional form of an object.
	SHELF LIFE —The length of time before sensitized material deteriorates.
	SHIP'S CURVES —Instruments for drawing elongated, irregular curves that closely approximate the curves found in shipbuilding.
	SHUTTER SPEED —A method of controlling the length of time that light can reach a film.
	SIGHT LINE —An imaginary line extending from the eyes of a figure in a drawing to an object indicating that person's direction of glance.
	SINGLE-ACTION AIRBRUSH —A device that releases both air and pigment by pressing down on a button.
	SIGNATURE —A sheet of paper printed on both sides and folded to make up part of a publication.
	SILHOUETTE —An outline of an object or figure filled in solidly without indication of modeling or surface structure.
	SILKSCREEN —A method of printing through a stencil fixed to a screen of natural or synthetic fiber or metal mesh.

Continued on next page

Glossary, Continued

S (Continued)

SIZE—Also called **SIZING**. Various gelatinous materials made from starch, clay, glue, and casein used for glazing or coating papers and cloths.

SKETCH—A quickly executed drawing as a preparation toward more finished work.

SKETCHING PENCIL—See **CARPENTER'S PENCIL**. A soft—lead pencil used for freehand sketching.

SMALL CAPS—Capital letters smaller than the standard capitals of a typeface and the size of the body of the lowercase letters.

SODIUM THIOSULFATE—Also called **HYPO**. A salt with water solution that dissolves the silver halides used in photographic papers and films.

SOFT EDGE—A blended or graduated transition from one value or color to another.

SOFTWARE—Computer programs that direct the output devices and determine the input devices effectivity.

SPECIAL EFFECTS GENERATOR—A device that adds or creates effects to visual images during recording on videotape.

SPECIAL IRREGULAR CURVE—Irregular curves for a specific purpose, such as ship's curves, mechanical engineer's curves, conic sections, logarithmic spirals, and flexible curve rules.

SPECTRUM—The arrangement of colors side-by-side as refracted by a prism.

SPEEDBALL PENS—Lettering and drawing pens manufactured by the Hunt Manufacturing Company that are the hallmark of hand lettering pen nibs.

SPEED LINES—Extra lines following a moving figure or object in a cartoon representing the disturbance the movement causes in the atmosphere.

Continued on next page

Glossary, Continued

- S (Continued)** **SPHERE**—A form where all points are equidistant from the center.
- SPINE**—The bound edge of a book.
- SPLINE**—A flexible rule, held in place by lead ducks, used to draw irregular curves.
- SPLIT BRUSH TECHNIQUE**—*Also called* DRY BRUSH TECHNIQUE. Painting or drawing with a brush having the hairs separated to form more than one point.
- SPLIT COMPLEMENT**—A color scheme that uses a key hue with the two colors that lie adjacent to its opposite on the color wheel.
- SPLIT FIELD**—A rangefinder that focuses an image by dividing the image in half and requiring alignment into a whole.
- SPOT COLOR**—Using a combination of two individual colors, a main color, usually black, and an accent color instead of a full—color output.
- SQUEEGEE**—(1)An implement used on silk process printing presses that forces ink and ink compounds through the screen and stencil onto a printing surface to form the image; (2) The process of forcing pigment across a surface with other than a brush.
- STABILIZER**—A chemical that arrests the continued development of an image and fixes that image into the surface.
- STABILO PENCIL**—A pencil that uses grease or wax as a binder for pigment and is capable of writing on glass.
- STAT**—*See* PHOTOSTAT.
- STATIC**—Lacking in movement.
- STATION POINT**—The point of observation in the making of perspective drawings.
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Continued on next page

Glossary, Continued

- S (Continued)**
- STILL LIFE**—A pictorial arrangement of inanimate objects.
- STIPPLE**—The effect obtained by using a series of dots or flicks in drawing.
- STOCK**—Material printed or worked on by printers or artists.
- STOP BATH**—A chemical solution that stops photographic development.
- STOPPER**—An eye-catching device in a picture that grabs and holds a viewer's attention.
- STORYBOARD**—A panel presentation of rough sketches of a proposed series of views.
- STRAIGHTEDGE**—An instrument with long, straight edges
- STRIP IN**—To position copy not pasted up on the mechanical before platemaking.
- STRIPPING**—Cutting out and placing in position.
- STUDIO CARD**—Illustration or pictorial information on a card intended for television transmission.
- STUMP**—A pencil-shaped roll of paper used to blend pastel, pencil, and charcoal.
- STYLIZED**—Characterized by an emphasis on style and design.
- STYLUS**—A scraping instrument with sharp or chiseled edge.
- SUBHEAD**—A secondary headline or title.
- SUBTRACTIVE COLOR PROCESS**—The process of forming colors by mixing pigments.
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Continued on next page

Glossary, Continued

S (Continued) **SUBORDINATION**—Subduing part of a picture to make it less important than another part.

SUPERIMPOSED—*Also called* SUPER. One image or text placed over another without totally obscuring the first.

SUPERIMPOSED IMAGE—A rangefinder that focuses an image by requiring the alignment of two images over each other.

SUPPORT—The reinforcement or backing for a painted surface.

SURREALISM—An art movement whose objective is to explore the realm of unconscious emotion and dreams.

SWATCH—A small sample specimen.

SWEDE PEN—A broad nibbed, adjustable ruling pen.

SWIPE FILE—*See* RESEARCH FILE.

SYMBOL—A visual element that represents something else.

SYMMETRY—Similarity in size, shape, and relative position of parts on opposite sides of a dividing line.

T **TABOURET**—A portable cabinet used to hold the artist's drawing tools and materials.

TEAR SHEETS—*Also called* CLIP ART and PICTURE MORGUE.

TECHNICAL ILLUSTRATION—Drawings for technical reports, proposals, manuals, and catalogs, as well as visual aids, briefing charts, projecturals, slides, and posters.

TECHNIQUE—(1) The method of using a tool or medium; (2) The characteristic appearance of a medium; (3) The particular style of an artist.

Continued on next page

Glossary, Continued

T (Continued)	TELEPHOTO LENS —A long focal-length lens that has the effect of bringing far objects nearer.
	TELEVISION GRAPHICS —Graphics created specifically for transmission via television.
	TEMPURA —Dry pigment mixed with an emulsion of egg yolk or milk to form an opaque watercolor.
	TEMPLATE —A guide made to ensure the uniform consistency of frequently used symbols.
	TERTIARY COLORS —Any intermediate hue that contains some part of each of the three primary colors.
	TEXT —Typewritten or printed matter forming the main body of a work.
	TEXTURE —The feel or appearance of a surface created by the repetition of forms or design.
	THERMAL TRANSFER PRINTER —A printer that uses heat to fuse the image to a paper surface.
	THIRD DIMENSION —The effect of depth or bulk achieved by the artist on a flat surface.
	THREE DIMENSIONAL —Possessing height, width, and depth.
	THREE-QUARTER VIEW —A view of an object rotated to a position halfway between a front and a side view.
	THREE-POINT PERSPECTIVE —A view where no dimension, height, width, or depth, is parallel to the plane of projection.
	THUMBNAIL SKETCH —Page layouts showing the allocation of space for headings, photographs, line artwork, and text.

Continued on next page

Glossary, Continued

- T (Continued)**
- THUMBSPOTS**—Visual indicators placed on a slide mount to identify the emulsion side of the film and simplify tray loading.
- TILING**—A fill pattern effect that repeats a pattern over and over.
- TILT CARD**—A vertical card that requires up-and-down camera movement.
- TIME LINE**—A projected plan of execution outlining significant milestones and deadlines used to monitor work in progress closely.
- TINT**—A mixture of pure color and white.
- TISSUE OVERLAY**—Thin, translucent paper placed over artwork for protection and corrections.
- TITANIUM WHITE**—An opaque white.
- TITLE BLOCK**—Space in the lower right corner that contains the identity of the drawing, the subject matter, the origins, the scale, and other data.
- TITLE CARD**—A television card that contains text only.
- TONAL**—Having gradations of gray or intermediate values.
- TONE**—(1) A value usually predominate which sets the key; (2) A thin layer of paint applied to a ground to eliminate the whiteness of the surface before painting.
- TOOL BOX**—*See* BUTTON BAR.
- TOOTH**—The ability of the paper surface to accept various mediums.
- TORTILLON**—*Also called* STUMP or STOMP. Tightly rolled paper, leather, or felt used to blend charcoal, pastels, pencil, chalk, or crayon.
- TOUCHE**—A liquid-masking agent or lithographic crayon applied by brush to a lithographic plate or stone.
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Continued on next page

Glossary, Continued

T (Continued)

TOUCH SCREEN TECHNIQUE—Activating the pixels on a CRT screen through the touch of an electronic light pen or the fingertip.

TRACING PAPER—A thin, transparent, or translucent paper used for transferring an image from one surface to another by tracing.

TRACKBALL—*See* JOYSTICK or MOUSE.

TRAMMEL—A mechanical device used to draw an ellipse.

TRANSFER SHEET—Preprinted characters and symbols on cellophane or acetate used in preparing cold composition, camera-ready copy.

TRANSLUCENT—The characteristic of allowing light to pass through without permitting objects to be seen clearly through it.

TRANSPARENCY—Any transparent material intended for projection that bears an image.

TRANSPARENT—The characteristic of allowing light and objects to be seen clearly through it.

TRAPS—A slight overlap of the outline of an element to prevent white space from showing around the edges minimizing the effect of press plate misalignment.

TRIAD—The use of any three pigments equally spaced on a color wheel.

TRIANGLE—A triangular shaped ruling guide available in various sizes and angles usually made of clear plastic or metal.

TRIM MARKS—Marks used on printed sheets or other substrate to indicate where to cut or trim stock both vertically and horizontally.

TRIMETRIC PROJECTION—An axonometric projection of an object where no two axes make equal angles with the plane of projection requiring three different foreshortening ratios.

Continued on next page

Glossary, Continued

- T (Continued)** **T-SQUARE**—A ruling guide with a 90° angled crosspiece at one end used in making horizontal lines.
- TURPENTINE**—A solvent distilled from the sap of pine or from pine wood used as a thinner and to clean brushes.
- TUTORIAL**—A lesson guide.
- TWO DIMENSIONAL**—Flat, without depth, having only width and height.
- TWO-POINT PERSPECTIVE**—*Also called* ANGULAR PERSPECTIVE. The most common type of perspective drawing where the object is sitting at an angle to the plane of projection and each object has two vanishing points.
- TYPEFACE**—The printing surface of an alphabet judged by its design, printability, wearability, and position on the letter body.
- TYPE FAMILY**—A group of typefaces similar although not exactly alike in design.
- TYPE SERIES**—Different sizes of the same typeface.
- TYPESETTERS, PHOTOGRAPHIC**—Machines that supply a variety of type designs and sizes, automatically letterspaced and justified on transparent film or plastic-coated opaque paper.
- TYPOGRAPHY**—The art of type selection and arrangement.
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- U** **ULTRAVIOLET LIGHT**—Actinic (shorter wavelength) or useable part of the light spectrum needed to react or harden light—sensitive coatings.
- UNDERTONE**—A color whose effect is modified by other colors imposed over them.
- UNRETOUCHED**—Not altered or improved by any means.
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Glossary, Continued

U (Continued)

UPPERCASE—The capital letters of an alphabet.

USER INTERFACE—The visual and physical attributes of a software program including tools-, text-, and graphics-handling characteristics.

UTILITY PLAN—A floor plan of a structure showing locations of heating, electrical, plumbing, and other service components.

V

VALUE—The relative lightness and darkness of different areas of the picture represented in tones, shading, line balance, and layout.

VALUE SCALE—The complete range of values from the lightest to the darkest.

VAN DYKE—A brownprint negative and sometimes a brownline positive.

VANISHING POINT—The point at which parallel lines receding from the observer appear to converge in a perspective drawing or photograph.

VARIGRAPH—A lettering device that allows manipulation of letter size, slant, and shape.

VARNISH—A solution made of a resin in a volatile medium.

VEHICLE—A liquid used as a carrier of pigment in paint.

VECTOR-BASED—Images based on a series of plotted points that define precise lines and geometric shapes.

VELLUM—A kind of fine, translucent paper resembling parchment or onion skin used for duplicating copies made with a whiteprint machine.

VELOX—A print of a photograph or other continuous-tone copy prescreened before paste-up or platemaking with line copy eliminating the need for a composite negative.

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Glossary, Continued

- V (Continued)** **VERTICAL SCAN RATE**—*Also called* FRAME RATE. The number of times per second a screen redraws an image.
- VIDEO DIGITIZING CAMERA**—A camera or film recorder attached to the front of a CRT screen used to record images.
- VIDEO DISPLAY TERMINAL (VDT)**—A visual display used in photocomposition work in conjunction with a keyboard.
- VIEWING PLANE LINE**—*See* CUTTING PLANE LINE.
- VIEWGRAPH**—*See* PROJECTURAL.
- VIEWPOINT**—The eye level of the viewer and the distance from the scene.
- VIGNETTE**—Fading an image from heavier to lighter tones blending it into the background or eliminating the background altogether.
- VISIBLE LINE**—The outline used for all edges seen by the eye.
- VISUALIZING PAPER**—A white, semitransparent paper used for making layouts and preliminary drawings.
- VISUAL LITERACY**—The ability to communicate effectively using only visual language.
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- W** **WARM COLORS**—Colors associated with heat or fire.
- WASH**—A monochromatic rendering with a brush and transparent watercolor.
- WASH DRAWING**—A watercolor painting consisting mainly of washes.
- WATERCOLOR**—A dry pigment bound by an adhesive, such as gum arabic, and applied, greatly reduced by water, to a surface in a transparent fashion.
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Glossary, Continued

- W (Continued)** **WAXER**—A device that applies a thin layer of hot, adhesive wax to the back of a surface.
- WET BRUSH**—A blending technique of laying two pigments side-by-side and blurring the line of demarcation while the pigments are still wet.
- WHITE LEAD**—A fine, poisonous, opaque white pigment used in flake white and Cremnitz white oil paints.
- WIDE ANGLE LENS**—A very short focal-length lens that encompasses a larger horizontal view than a standard lens. This lens, depending on the focal length, records an image with increasingly pronounced (barrel) distortion.
- WINDOW**—*See* BLACK PATCH.
- WORD PROCESSING**—The transformation of a concept or idea into printed communication media by using mechanical or automated systems, methods, or processes.
- WORD SPACING**—The adjustment of spacing between words to shorten or extend a line to achieve justification.
- WORKING DRAWING**—A thorough preliminary drawing done on tracing paper then transferred to a working surface for the finished rendering.
- WOVE PAPER**—A broad range of papers having an even fiber formation produced over fine wire mesh.
- WRAPPING**—(1) A computer feature that automatically enters a soft return reveal code and continues to enter data from the same sentence on another line; (2) Selecting a pattern or design and wrapping it around an object on the screen.
- WRICO**—A hand-lettering system using a set of templates and a drop fed pen.
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Glossary, Continued

X

XEROGRAPHY—A copying process that uses electrostatic forces to form an image.

Z

ZINC WHITE—A zinc-oxide based pigment that is less opaque than titanium and lead white.

ZIP-A-TONE—A transparent acetate sheet preprinted with patterns of dots or lines that create tone.

ZONE NUMBERS—Numbers and letters on the border of a drawing to provide reference points to aid in locating specific points in the drawing.

ZOOM LENS—A variable focal-length lens that functions as a telephoto lens but allows you to select the range of the object magnification.
